

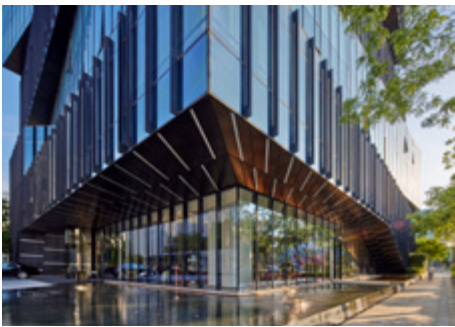
An aerial photograph of a modern urban courtyard. The courtyard is a rectangular area with a grid of trees and a paved walkway. It is surrounded by tall, glass-walled buildings. The image is used as a background for a report cover.

2023 FORECAST

Defining the design strategies that will shape
the built environment in the year to come

CRTKL

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What does the architecture firm of the future look like?

Architects have an unprecedented opportunity to address macro-trends, from the climate crisis to urbanization, through the evolution of their practice. No longer is the master architect-builder model relevant. Moving forward, data-informed, diverse practices will thrive in order to solve the issues facing our clients as well as our local and global communities.

Traditionally, architects worked together in one office, using a bespoke approach alongside a client to solve a specific design problem. Today, the efficiency and speed required to address societal issues like insufficient housing, while under the pressure of a client's expectation for data to support ESG efforts, are only a couple of examples in which the traditional architecture firm needs a radical transformation to stay relevant. Specifically, the future for the architecture firm is one as a trusted advisor to their clients, who provides robust and holistic design thinking informed by data and diverse perspectives.

Moreover, architectural thinking no longer solely manifests in built form. Sustainable application development such as **CLIMATE**SCOUT, or the knowledge and ability to address cultural and community concerns in hospitality, germinate from pairing insights from experts who are focused on sustainability, design technology, digital solutions, research, and architecture. So what does this firm of the future look like?

At CRTKL we established the Global Design Advisory comprised of our Experience Design, Sustainable Design, Research, and Digital Technology groups to augment our technical teams and fuel their abilities to address these macro-trends head-on. As a consortium, we possess a nuanced understanding of and focus on the human experience—whether that is developed through personal insight, the ability to test our ideas, fundamental research, or digital applications. This cross-disciplinary approach utilizes multiple methodologies and expands beyond the traditional architectural process and related research to include social sciences, technology, market analysis, and sustainability—shifting the way we practice and fueling robust solutions. Forecast 2023 is the space where this approach, across all market sectors, has been synthesized and shared, showing how we have begun to address the design thinking necessary for the new paradigm of architecture.

Design Advisory



Petco - SOTF2
San Diego, CA

From designing places to designing experiences, what is the role of the architect in 2023?

How an emphasis on experience is redefining the way we design.



We still put pen to paper and draw buildings that are constructed of steel, glass, and concrete. What will be different in 2023 is the depth and diversity of our teams. They will be made of architects, researchers, technologists, experience designers, interior designers, graphic designers, and business strategists all intent on impacting the end user. They will design experiences that create significant change for clients and their businesses.

PAUL CONDER

Principal | NY

Beautiful design is table stakes. In today's world of continuous visual communication, the architectural audience has the best examples of design with one tap, swipe, or scroll. Clients are more discerning. They are more informed and the effort it takes for architects to delight them has dramatically increased. At the same time, advances in [technology](#) and [digital automation](#) have gifted architects with the ability to bring the wildest and most complex designs to fruition. So, what does this mean for the role of the architect in 2023? In the future, the architect's true innovation

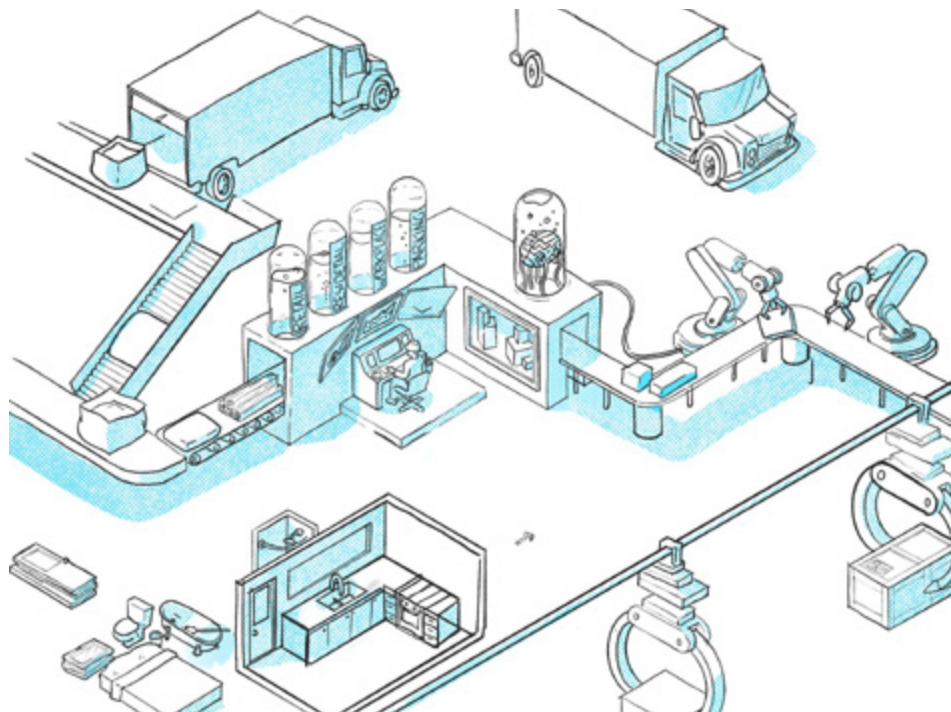
is all about designing and measuring the impact on human experience, more on this [here](#).

[Measurable impact](#) is key. Architects and clients will be accountable to a wider set of metrics that will not be revealed until after a building begins its use. Architects will engage with clients on how the experiences they have designed affected the user, the business, the community, and the [planet](#). They will ask critical questions to learn how intent translated to positive impact.

Being this kind of future-forward architect means digging deeper into experiential design than aesthetic alone. An architect's expertise will evolve to be bigger than the drawing and the coordination. 2023 will focus on expanding the role of the architect to be less about the building, and more about building a dialogue.

Artificial intelligence is here – how is the role of the designer changing?

How artificial intelligence can be a design partner, not a threat.



Over the last decade artificial intelligence (AI) has written a novel, drafted a screenplay, composed music, and created award-winning visual art. As AI becomes more common in the creative industries, it raises concerns about lost jobs, but also creates opportunities to delegate mundane and inefficient tasks to machines.

There are many recent studies which explore how AI can be used by architects to empower

and streamline the design process. One inefficiency that is currently being tackled by AI is the manual drawing of layouts. When he was at Harvard in 2019, Stanislas Chaillou in his project [ArchiGAN](#) took a database of over 800 apartment plans to train a machine learning model how to layout rooms, as well as position doors, windows, and furniture when given an apartment footprint. He successfully scaled this to apply the same logic to apartment building design.

Users specify how each floor is divided into apartments, and locate the entrances and circulation. This enables the model to propose individual apartment layouts, which are then reassembled to create the floor plate of the building.

While working at AHMM, the UK's Oliver Green created [Homegrown](#), an apartment layout recommendation tool which combines machine learning techniques with the firm's library of completed residential designs. Today, architects use his tools to review suitable layouts against their building and reconstruct any apartment in Revit in seconds. [Architext](#), launched by Theodoros Galanos and Tyler Lastovich last year, has a website that uses artificial intelligence to allow you to create apartment layouts by describing them in words.

AI is also helping architects create better and more sustainable designs. [Spacemaker](#) uses machine learning to help designers test their designs for sun, daylight, and noise at the start of the design process.

Instead of having to wait for hours, days, or even weeks to get analysis results for our projects, AI computes this information within seconds. Designers receive the information they need faster, so that they can quickly iterate and reach the optimum solution.

These tools offer the potential for testing multiple design solutions quickly to get to an agreed aesthetic without painfully modeling each variation to get feedback. Text to image tools such as [Midjourney](#) and [Dall-e](#), also based on machine learning and AI, have given us a practical example of how AI can help create unique masterpieces in seconds. In this process, the role of the designer has changed. Rather than producing the work ourselves, our job is to choose the right selection of prompts to achieve the desired aesthetic and outputs. More on this [here](#).

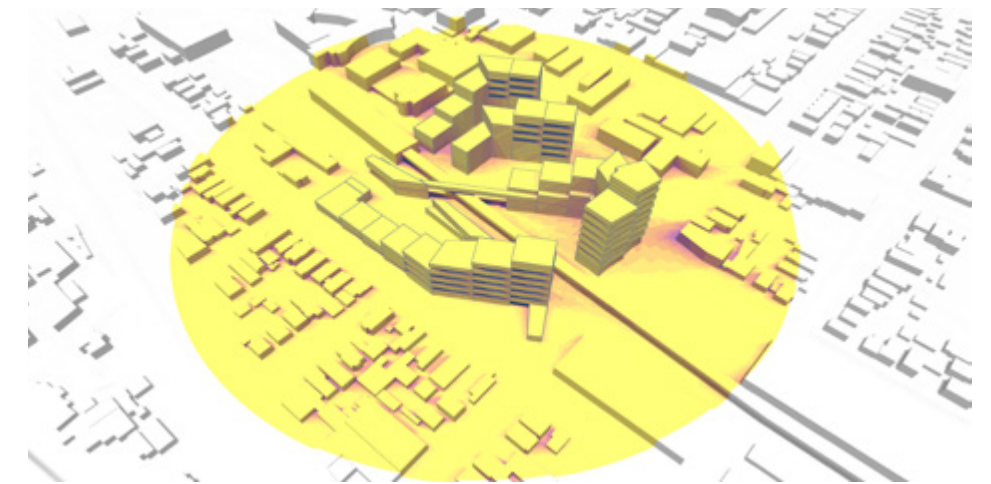
Most architects aspire to produce better places and spaces. How we design and deliver these projects is constantly evolving. Adopting new tools can be painful, but we cannot ignore the importance of change in the industry. AI and other emerging technologies will become a part of the way we design into the future, changing how we work for the better.

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Design was previously limited by our ability to manually draw and analyze options. Now with the power of AI we can generate and analyze a greater amount of options at greater speed, which makes for more informed and robust solutions.

CAOIMHE LOFTUS

Associate | London



The gamification of architecture – what is the potential of multiplayer design?

A multiplayer world offers designers, clients, and communities a new way to engage with future spaces.

Real-life gamification, taking place in platforms like the Metaverse, have emerged from decades of video game development. The play associated with simulated aspects of life similarly taps into our emotions, allowing us to form connections and aspire to new ways of being. These gaming engines also have the potential to transform the way we design and allow people to engage in the process as multiplayer players in a virtual world. This concept is nicely illustrated in Ernest Cline's 2011 novel [Ready Player One](#), as well as Steven Spielberg's movie adaptation, which tell the story of a world escaping from crisis through a virtual simulation of all aspects of life.

Gaming engines are particularly suited to the modularity of the design process. In its most basic form, design involves identifying modules based on a function and their association with other modules to create components that can be arranged in a logical way to create spaces. This spatial information is represented in the form of

“The linearity of the design process needs to be broken; and a more inclusive, integrated process needs to be built. Ideally, we should be able to experience a space as we are designing it, tinker the solution as a group in a workshop, then document it for production.

KASHIF DAFEDAR

Associate | D.C

conventional technical drawings that very few people aside from professionals understand, or at best, photorealistic digital renders or animations. In most cases, the only time when a design can be experienced is after the space has been constructed.

The tools capable of performing such interactions are not readily available to architectural studios, however they do exist in video games and have for some time. All gameplay elements hold data that defines them. A typical game registers the number of lives a player has, the health status of players and opposition, visual properties, location,

and more. In the context of architectural usage, this system can be used to leverage spatial, occupational, and BIM data. Access to this information and the ability to weave an interactive virtual environment using this data makes gaming engines a strong tool to consider for architectural communication.

By embedding architectural and constructional data within digital design environments and creating dependencies that emulate real-life constraints, information collected from the BIM model can be used to create analytical dependencies that provide further insight into the

design concept. The platform can monitor quantifiable properties of the design, from cost and availability which can inform the user of their budget, to embodied carbon which can indicate the overall sustainability of the assembly. Other properties like time to construct, fire rating, and acoustics can also help encourage users to optimize their design options in their respective criteria.

Such an interactive tool could be programed to incentivize users to improve sustainability, reduce carbon footprint, improve indoor conditions, and penalize them if they overlook building codes or safety conditions. In general, improving the design would get you a better score. Just as well-designed games find ways to keep the user engaged, and incremental scoring keeps the player coming back for more, so too would an architectural version. A gamified objective to get the perfect high score would directly impact the quality of our designs and transform the way we conceptualize spaces.

By adopting gaming engines, architects can also create interactive, immersive experiences that can be broadcast to most Augmented Reality (AR) or Virtual Reality (VR) kits. These are now readily available to consumers and

with the help of an inexpensive slide-on attachment, most mobile phones are also now capable of rendering basic VR environments.

Many architectural institutes already include programming and computational thinking centric curriculums. Many professionals are learning to code as this allows them to accomplish repetitive tasks in no time, including tiny algorithmic scripts which allow users to easily create and manipulate complex forms. The one-time exercise

to develop this tool would be challenging, but ultimately create a replicable framework that can make consecutive production more economical.

This will result in a platform that allows us to minimize the time taken for decision making by improving multiuser engagement in the design process. Place this within an immersive and interactive virtual environment, and users will be motivated to improve design through the gamification of the process.



How do you measure memory, emotion, and awe in the built environment?

By studying emotional responses, we can uncover the impact of the built environment on human experience.



Smithsonian Institution, Hirshhorn Museum and Sculpture Garden Repairs & Renovations
Washington, DC

We live in a world that understands success in numbers. For the design of museums, this is communicated through ticket sales and how quickly those multiply. The approach seems crude for measuring how some of our most important cultural spaces resonate with the public.

What if, instead, we could measure the emotional response of visitors? In other words, we could uncover not just how architecture works, but how the memory of architecture works, too.

The Neuroaesthetics of architecture, or

Neuroarchitecture, is a budding field that studies why spaces evoke certain responses in their visitors. It lends a scientific lens to the abstract concepts of poetics and beauty, pairing them with the study of the brain. By understanding what happens in our brains when we engage with

a space, we can track how people respond to certain elements of the built environment.

However, most designers do not have access to brain imaging. Instead, there is a more accessible approach to understanding people's emotional responses to the built environment that can be easily folded into the design process, whether that is through the use of virtual reality in the conceptual phases or part of post-occupancy studies.

The three of concepts of memory, emotion, and awe were used to frame [a study](#) of visitor responses to two cultural destinations in

Spain: the Alhambra, the eighth most visited monument in the world, as well as the Sagrada Familia, the largest unfinished Catholic church in the world. Cognitive analysis of memory, emotion, and awe are not commonly explored due to the difficulty of quantifying and representing them visually. Pulling from the tech and product design industries, understanding users' preferences—like [the feeling that curvilinear rooms are more beautiful than rectilinear rooms](#)—can lead to greater project success and higher value. The implementation of this knowledge can create more spaces that we want to return to again and again.



Museums serve to preserve our heritage and reflect our culture. Traditional institutional goals of aesthetics and beauty are now coupled with security and operational efficiencies to deliver unified and signature facilities.

In an increasingly busy, complex, and diverse world, museums must develop new strategies to thrive and actively engage their visitors. We place special emphasis on integrating both the physical and virtual experiences so that each visit becomes one's own personal journey.

BILL MCCARTHY
Principal | D.C.

Visitors to the Alhambra and the Sagrada Familia were asked a series of questions about their experience. Two methods of questioning were used: memory scanning, where visitors were specifically asked about architectural elements they remembered, and memory surveying, which allowed visitors to openly comment on their overall experience. For memory scanning, they were told to close their eyes for thirty seconds and then mention the element of the spaces that they remembered most.

Some of the most frequent memories of the Sagrada Familia interior were stained glass, colored light filtering through the space, tree-like columns, intricate sculptures, impressive size, ceiling intricacy, and the contrast between smoothness and detail throughout. In the Alhambra Nasrid Palace interior, the top memories were the muqarnas archways, wall carvings, garden, “mashrabiya” (lattice) windows, expansive views, turquoise and blue muqarnas, geometric wood ceiling, the fountain at the Court of Lions, and the red stone in the walls.

The value of this study lies in its simplicity and applicability. With this relatively easy approach, the phenomenon of aesthetic experience becomes less theoretical and makes it possible to quantify intangible concepts. This methodology is not limited to cultural projects, nor these three concepts. It is customizable depending on which abstract concepts need to be studied, whether that is learning within a higher education facility, or motivation in a workplace environment. We can begin to apply this to scale to understand how the design of everything from objects to cities affects us, therefore raising the possibility for us to experience awe in the every day.

Contemporary museum design and renovation often focuses on the ways in which social and cultural changes influence the re-shaping of our cultural spaces. Evolution in human behavior, physical and technological engagement, and attendance introduce new possibilities for art institutions and architecture alike. In the case of CallisonRTKL’s repairs and renovations of the Smithsonian Hirshhorn Museum and Sculpture Garden, much

DEMOGRAPHICS:

Visitor Country of Origin:		
Sagrada Familia Memory Survey:	Sagrada Familia Memory Scan:	Alhambra Memory Scan:
US – 15% UK – 13% ESP – 10%	ESP – 16% UK – 12% US - 12%	ESP – 19% US - 10% FRA & GER - 7%

Visitor Age:		
Sagrada Familia Memory Survey:	Sagrada Familia Memory Scan:	Alhambra Memory Scan:
20-30 – 28% 40-50 – 27% 30-40 – 24%	20-30 – 33% 30-40 – 27% 40-50 – 24%	20-30 – 27% 40-50 – 26% 30-40 – 24%

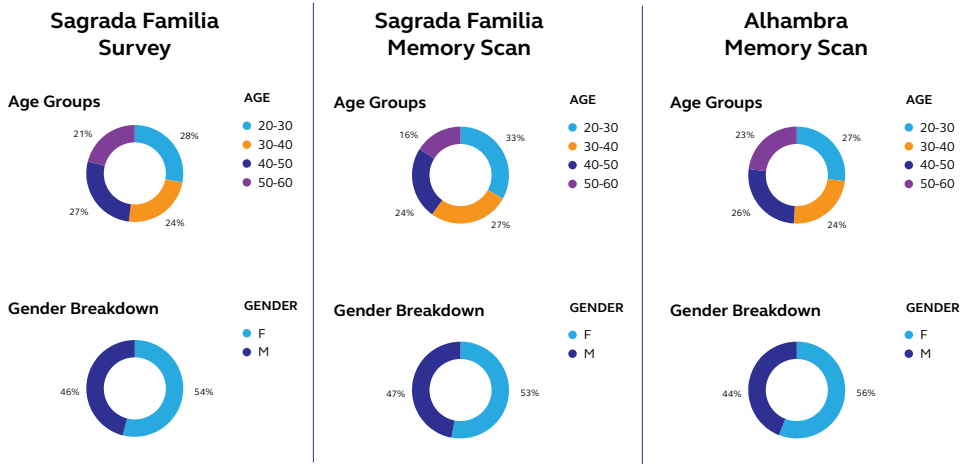


Figure 1: These charts show the age and gender breakdowns for all three studies. There was a balanced representation of age groups and genders across the board. (Desooky, 2022: PowerBI)

RESULTING FINDINGS:

Emotion Percentages:		
Sagrada Familia Memory Survey:	Sagrada Familia Memory Scan:	Alhambra Memory Scan:
Strongly Happy - 33% Happy – 35% Neutral – 27% Unhappy – 5%	Strongly Happy –10% Happy – 43% Neutral – 41% Unhappy – 6%	Strongly Happy - 32% Happy – 40% Neutral – 27% Unhappy – 1%

Awe Percentages:		
Sagrada Familia Memory Survey:	Sagrada Familia Memory Scan:	Alhambra Memory Scan:
Extreme Awe – 41% Awe – 44% No Awe – 15%	Extreme Awe – 33% Awe – 37% No Awe – 29%	Extreme Awe – 20% Awe – 50% No Awe – 30%

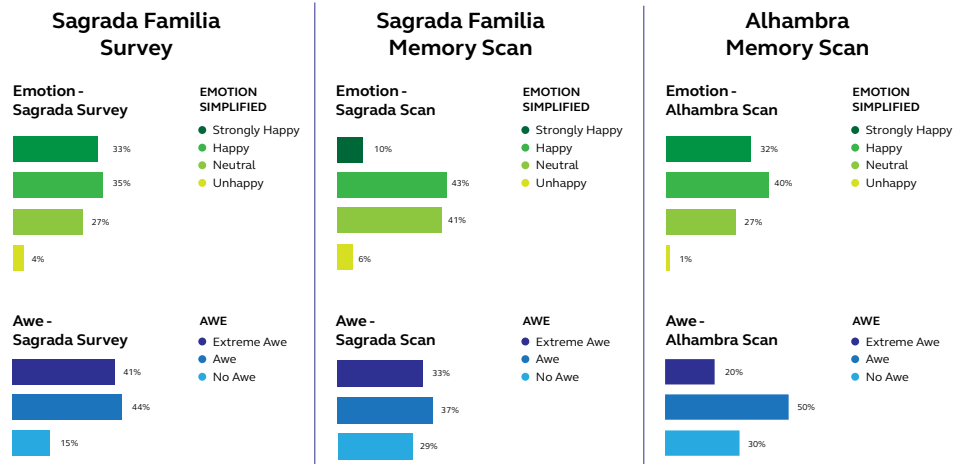


Figure 2: These charts show the emotion and awe-factor percentages for all three studies. Method 2 yielded high strong happiness (on the left) while Method 1 yielded the opposite in the Sagrada Familia (middle). This indicates that the method of questioning is important in yielding accurate results and representation of happiness. Method 2 yielded higher Awe values than Method 1. In the Alhambra, the Method 1 analysis yielded “strong happiness” and “happiness” as seen on the right, which compares highly with the emotional results of the Sagrada Familia to the left of it, which using the same analysis method. (Desooky, 2022: PowerBI)

consideration was paid to the persistence of awe throughout the construction phase. The result was the integration of artwork, in the form of a façade-sized exhibition, throughout the construction process. In this way, the Smithsonian was able to integrate art that seamlessly fit the identity and aesthetic of the overall museum, turning the exterior of the building into an outdoor art destination.

Urbanism & Landscape



The Roosevelt Collection
Chicago, IL

How do we advance upon net zero and create healing environments?

Integrating nature-based solutions for true sustainability.

Regenerative comes from the Latin verb *regenerāre*, meaning to “bring forth again.” It is a word that is typically applied in biology to tissues and organs, a salamander’s finger, or a sea cucumber’s nervous system. It is associated with many other words with the re-prefix, like regrow, revitalize, restore, and renew. A regenerative system is one in which all elements are interconnected, and each element relies on the others to maintain and thrive for the betterment of the whole. Rather than understand humans, nature, and the built environment as three separate entities, they can be viewed as one system. In this way, the substance of ourselves and the substance of our designs are enmeshed with the substance of nature. These concepts lead us to regenerative design. It is defined by the ability to use design in a way that allows nature and humans to coexist, and thrive in that coexistence, ultimately restoring our ecosystems and creating resilient places.

Plants are, in many ways, already working with us to respond

to climate change. They trap carbon, reduce temperatures, catch pollutants, purify water, and recover soils after natural disasters. Cities suffering from urban heat island effect—an increase in temperature due to a dense concentration of buildings and pavement—can be up to 10 degrees warmer than surrounding rural areas, creating higher pollution levels and increasing illness and death. Green space can help cool the environment, while also acting as a carbon sink, offsetting some of the carbon accumulation in urban areas with significant sealed surfaces such

as sidewalks and buildings. Only one square meter of green roof is needed to offset a car’s annual particulate matter emissions. These natural solutions can be paired with recent innovations such as materials that capture carbon like [paint manufactured from waste-cement](#).

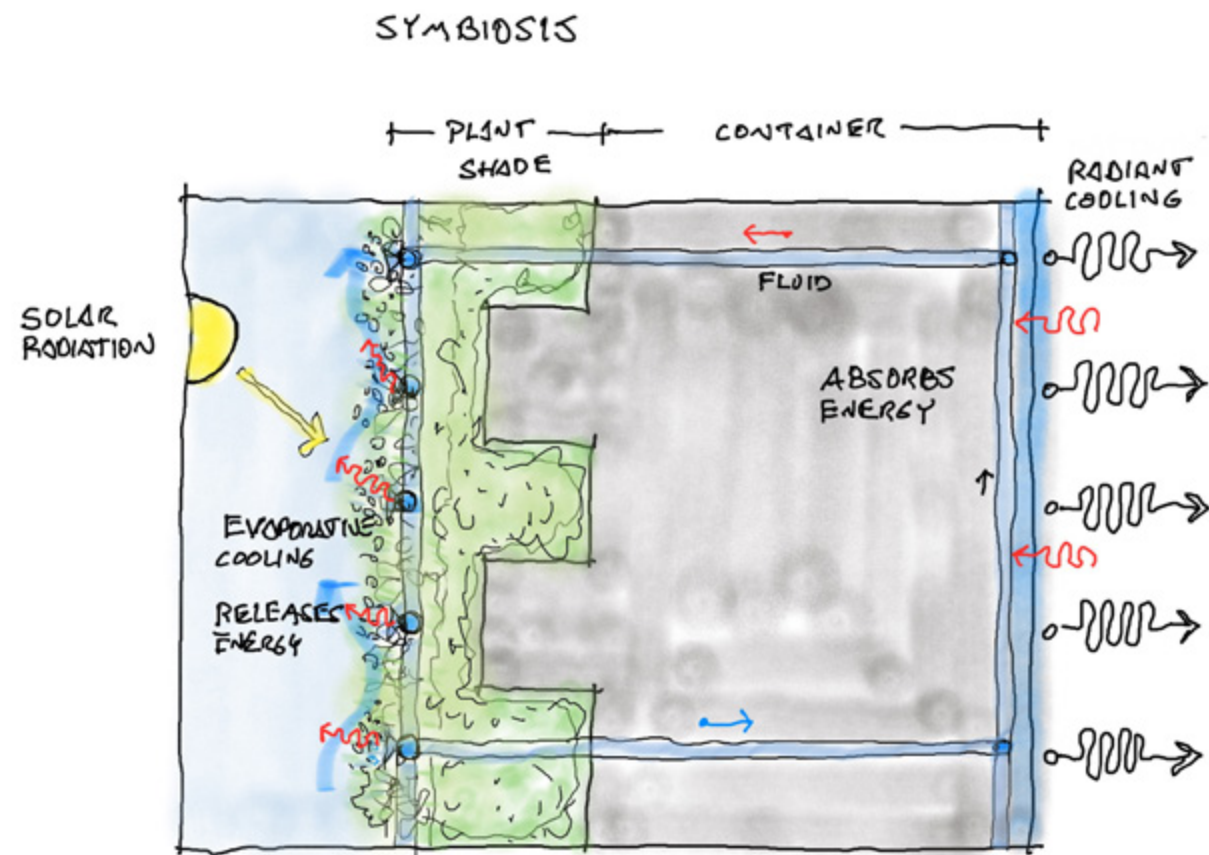
In addition to green space such as parks, urban farms can be incorporated into areas with a high quantity of unused roof space, which can be cultivated to provide fresh and affordable food to local communities and mitigate the impact of these

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Though new technologies and strategies like net zero have allowed us to reduce carbon emissions, it is the thinking behind regenerative design that will allow architects to take a unique interdisciplinary approach, one that taps into the knowledge centers of our natural world, and work in tandem to regenerate our planet’s systems.

PABLO LA ROCHE

Principal | LA



reflective surfaces. Locally grown food also helps to reduce the energy consumption of transportation, enhance biodiversity, and offer habitats to pollinators. The UAE has already incorporated these strategies into the [‘We The UAE 2031’ vision](#), which aims to enhance the production capabilities of local farms, secure one hundred percent of government food-related purchases from local farms by 2023, and lay the foundation for food security for future generations.

Incorporating the natural world into our design solutions also

offers significant benefits for our health and wellbeing. From an architectural point of view, the principle of biophilic design centers around connecting people and nature, bringing elements of our natural world into the built environment, such as natural light, water, plants, natural materials such as wood and stone, the feel of textures, patterns, and shadows. [Studies show](#) that green spaces directly affect the cognitive development of children and promote self-control behaviors. Inner-city landscaping in the forms of greenways and parks also encourage active travel and physical exercise, while

[gardening has shown](#) to offer cognitive benefits to seniors.

Nature has always played an important role in the human imagination and expression of the built environment. A regenerative approach allows the greening of our buildings and cities to take on new meaning and purpose. Rather than continue on a path of anthropocentrism, we must recast nature as a partner in the design of our built environment, in our ways of life, and in our methods for tackling the complex challenges of our time.



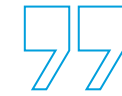
Central Walk (Times Mall)
Shenzhen



The Point
Draper, UT

Beyond highways — what is the future of mobility?

Building back better infrastructure and getting it right the first time.



Crumbling infrastructure is a global problem: failing bridges in Europe, collapsing tunnels in Asia, flooding transit systems in the U.S., unfinished railway systems in Latin America and the Middle East, and the ongoing deterioration of Africa's road network. As the world searches for quick solutions, and funding, to salvage our infrastructure, there is also the opportunity to rethink it. Our infrastructure is only as effective as the number of [people it serves](#). Racial inequalities are ingrained in histories of transportation and urban planning, which have served to create physical, social, and economic barriers for generations.

The future of mobility is directly impacted by the inability of mass transit to recover from the effects of the pandemic, as well as the decade of decline prior. Though these systems are struggling, employers still see the value in transit systems as critical for bringing workers back to the office. However, the high cost of conventional heavy and light rails systems is forcing many to seek out alternative systems, particularly in the US. Bus Rapid Transit systems

When we think about functionality and access in the next era of infrastructure, we should design to resolve various forms of mobility that have historically served as tools for racial segregation. We should consider how population growth and the proliferation of natural disasters have put stress on our existing systems, as well as the many ways in which the inefficient use of transport has negatively impacted the environment, our health and wellbeing.

CRAIG LEWIS
Principal | Dallas

are gaining popularity, but it is doubtful as to whether they can deliver the ridership benefits as well as the economic returns that investors are seeking as the mobility of choice to replace or reduce high-cost parking and spur new investment.

Interestingly, while congestion continues in many metropolitan areas, its importance has slid far behind other issues in the era of hybrid schedules and work-from-home. These flexible work arrangements have done more than any other traffic management program in our

generation to reduce demand on the system, though the mid-week commute in many cities looks much more “normal” these days. These changes are encouraging as highway departments and commissioners of transport are finally starting to rethink the failed experiment of the modern highway system. To be successful, the best transport planning will take a more comprehensive approach to mobility corridors to provide for needs both today and in the future.

There are a few places in the world that have managed to

tackle these issues. [Nearly two-thirds of all trips in London](#) are by foot, bicycle, or public transit, with the goal to increase that number to 80% by 2040. In this case, buses are greener, stations are more accessible, and transit, overall, is more reliable. Similar to London, Shanghai has taken a multifunctional and three-dimensional approach to mobility. Shanghai’s particularly expansive and clean bus network—including night buses, rush-hour buses, sightseeing buses, and airport buses—consists of over 1,400 lines, allowing users to easily and efficiently connect short and long distances. The number of accessible metro stations within 600 meters in Shanghai’s urban areas is also projected to increase by 40% as part of the city’s 15-minute community life cycle initiative, which has recently been expanded to include suburbs. There is much to learn from these cities and others to create a strategic approach to the next era of mobility.

Natural Connections

Nature abhors a monoculture, and a highway-first approach to city building will only lead to long-term collapse. As the desire for more green space grows around the world, there are increased opportunities to

reverse the car-centric nature of urban environments and increase access across the grid via parks and greenways. Infrastructure can be bridged with park space that caps over super-highways in dense urban areas like Dallas and Los Angeles, for example. Rather than acting as a divider, infrastructure can be the seam that connects disparate parts of the city that were ripped apart generations ago—often with racial motivations—and generate new public space with crossings that promote the pedestrian experience. Road planning can likewise be leveraged to increase the fluidity of automotive, bike, and foot traffic alike.

Micro-Mobility

These efforts to move away from a car-centric approach supports the fastest growing mobility—micro-mobility, which includes eScooters, bicycles (electric and human-powered) and walking. To the chagrin of drivers, bike lanes are reclaiming vehicular lanes, and slowly creating viable networks for cyclists. Led by the Netherlands, countries around the world are investing heavily in cycling and micro-mobility networks and are seeing great [economic and social returns](#). For urban development, having a mix of vehicular lanes that

accommodate moderate speeds, micro-mobility lanes for lower speeds, and sidewalks for low-speed walking has become a recipe for location-efficient living and commerce. The popularity in being able to move flexibly is evident in the emergence of TOD—trail-oriented development. Adjacency to multi-use urban trails provides a linear recreation amenity and a mobility option that is significantly cheaper. In some communities, these trails parallel transit systems and offer the ability to traverse city centers and neighborhoods, both urban and suburban.

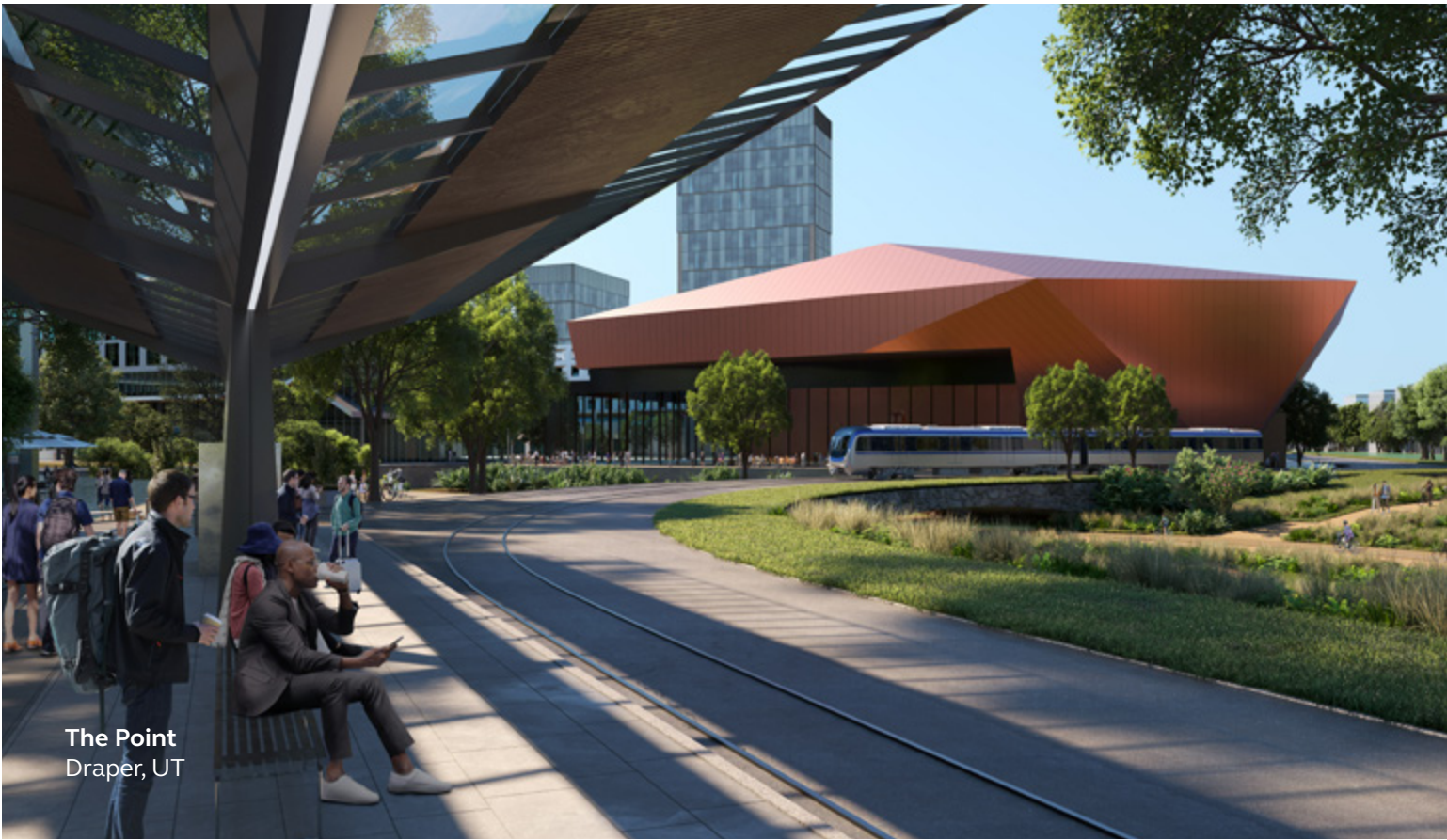
Charging Infrastructure

So far as new modes of mobility go, the deployment of Autonomous Vehicles (AVs) remains elusive. Electric vehicles, however, are dominating the global conversation as automakers from every industrialized country are retooling to accommodate the demand. In turn, there is a growing need for charging infrastructure to support this shift. Though electric vehicles will not lessen congestion, they will reduce carbon emissions, making the air in our cities cleaner. The quiet nature of the electric vehicle at lower speeds makes housing adjacent to thoroughfares much

more palatable though also poses some safety concerns for pedestrians and cyclists who are accustomed to echolocating potential conflicting traffic.

In the design and engineering of all mobility infrastructure, we must continue to invest in people-first infrastructure. Every trip begins and ends as a pedestrian. To build vibrant cities of the future, every block of the city must be connected to modes of transport along the ground floor, encouraging movements

that are safe, interesting, and promote healthy ways of life. The challenge of urban development in the next decade is not to build taller buildings, it is to create places that encourage people to move from one block to the next without getting in a car.



The Point
Draper, UT

The overlooked half — how can our cities be designed for women?

Planning for safe and inclusive urban spaces for women and teenage girls also improves the needs of other vulnerable groups.

Our cities are not built for everyone. In fact, many aspects of urban spaces and transport systems are designed around the experience of a young, able-bodied man. Revisionist concepts for cities consider what our urban spaces would look like if they were designed for vulnerable populations, including [women](#), children, queer, and [neurodivergent populations](#), as well as if our cities were not [racially segregated](#), [ableist](#), [ageist](#), nor [imprints of settler colonialism](#). Because most cities and their institutions have been designed by and for a sliver of

the population, they remain sites of inequality. In the effort to give space back to the public, particularly in the form of third spaces—which offer people a place to go outside of work and the home—we should move beyond traditional modes of planning to broaden our reach.

A lack of women in urban planning and policymaking institutions generates urban spaces that create social, economic, and political barriers for women. A primary concern for women visiting and living in cities is safety. [The UN reports](#) that

nine in ten women globally feel unsafe in urban public spaces, and [a recent study](#) in the UK shows that girls as young as 14 have adopted coping mechanisms to avoid being harassed in public. There are urban design solutions that can increase the feeling of safety for women, including open gathering spaces, increased visibility, improved signage, and well-lit areas and pathways.

Women in more industrialized nations are also the key decision-makers when it comes to consumer spending with [control over 70-80% of all household expenditures](#). This translates to a need for female-friendly characteristics that consider soft lighting, attractiveness, cleanliness, flooring materials that are “heel-and stroller friendly”, and safe pathways to parking and transport as a means to increase economic viability of shopping districts.

Additionally, as women are more likely to be primary caregivers for children and other family members, the provision of female-friendly outdoor spaces and mobility networks will better enable women to participate in civic life. Sidewalks can be widened, ramps added, and smooth pavement incorporated for women pushing strollers



Newland Canyon Falls Amenity Center
Flower Mound, TX

and using wheelchairs. Because [nearly half of women](#) feel unsafe using public transportation after dark, well-lit and surveilled public transportation with clear lines of visibility will help those who are more vulnerable to travel the city without fear.

Teenage girls, too, are generally overlooked in the design of our built environment. Basketball courts, skate parks, and other spaces for sports and recreation are typically dominated by teenage boys and men. Entering those spaces can be intimidating

and unsafe. In fact, there are few public places where teenage girls can relax and feel that they are not in danger. There is only so much design can do to implement strategies that protect women and girls in a world that accepts gendered violence as normal. We can start by taking teenage girls, including their interests and needs, seriously. [Girls want lounge spaces and tables where they can be together](#), they want to be able to make art and play games. They want to be active in sports, to swing and climb, without having to worry about

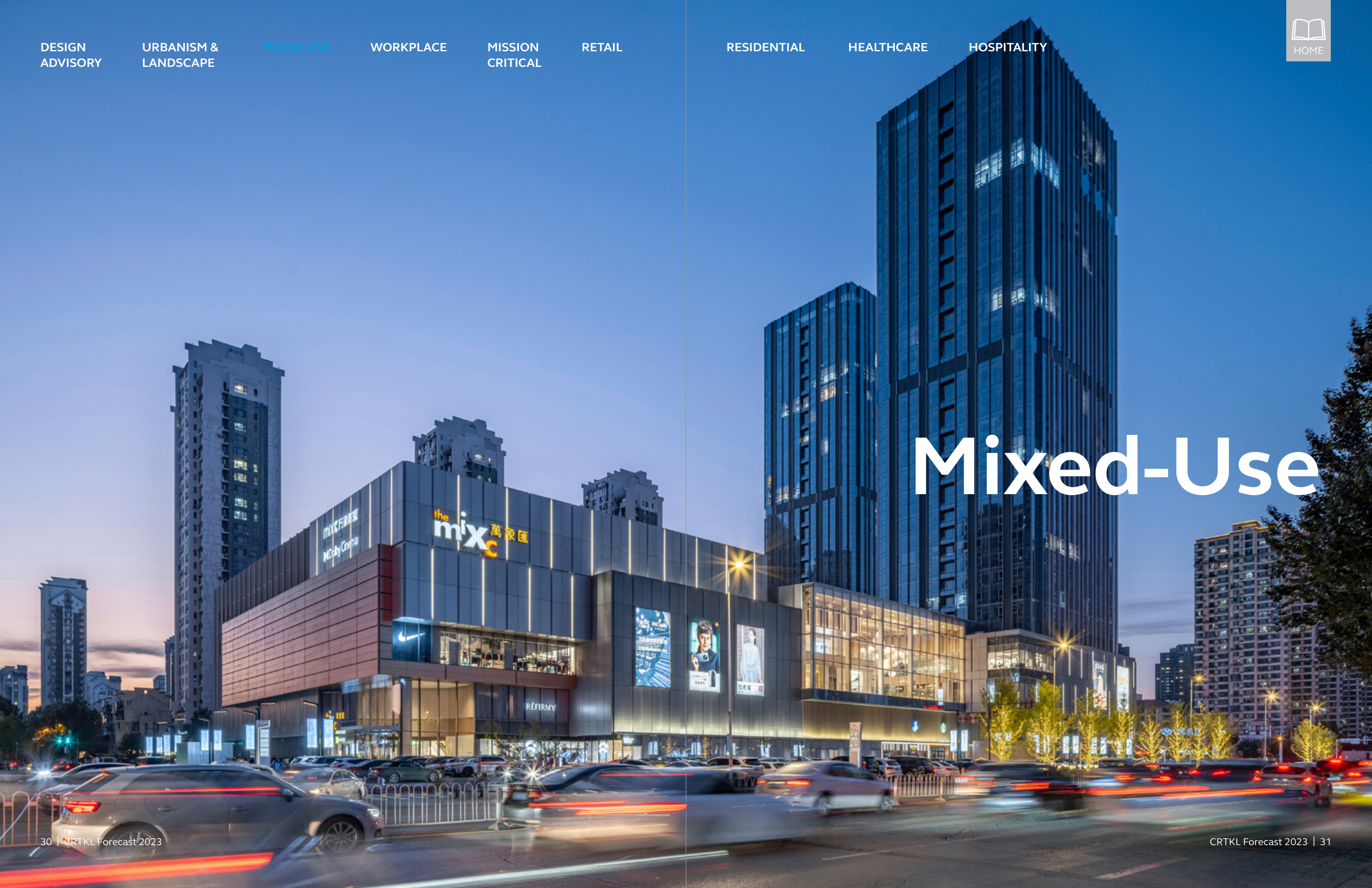
being watched, catcalled, or followed. They want to listen to music together outside and make content online. Teenagers will continue to spend a significant amount of their time online, but there are ways that we can create engaging environments outside that allow them to do so. Spaces for content creation can let teenagers reimagine their digital presence and treat the process as their own artistic endeavor.

Perhaps most importantly, we need to be inclusive of women (among other potential user groups) when we design our public spaces by [engaging them in a participatory process](#). This includes accommodating their needs, which often require the juggling of formal work positions with informal caregiving (think: providing childcare at public meetings). Places that are designed for women have the opportunity to invite other populations by creating safe, multigender, and multigenerational environments. By caring for the needs of women, we can elevate our society for all.



Spaces that are designed for women and other populations who may be more vulnerable begin with a sense of safety and welcoming, and are shaped by details that are often much more nuanced.

FEDERICA BURICCO
Senior Associate | London



Mixed-Use

Advanced placemaking – how can you level up in 2023?

The difference between a successful place and an underperforming asset is the difference between mixed-use and blended-use.

Mixed-use developments have been a part of our built environment for centuries. After a lull from 1910-1950 due to modern zoning and the implementation of land use practices, they resurged in the '70s as a method of urban revitalization; in the '80s on a smaller scale and focused on heritage preservation; and in the '90s as a key part of transit-oriented development. Though mixed-use has played a significant

role in activating our urban areas, the approach has a way to go in creating a holistic destination that is a greater sum than its parts.

The lines between all sectors are now blurring, with blended spaces seen as the next evolution of mixed-uses. This is, in part, a response to how real estate has transformed into a service industry that is more responsive, adaptive, and flexible. In turn, this is also transforming how we



Traditional single-use retail assets are becoming less viable. Even multi-use high street, or main street models are ailing and in need of a mixed-use solution that goes beyond the stacking or addition of residential or hospitality uses. Instead, it should be a case of $1 + 1 = 3$, whereby the introduction of other forms and functions are considered holistically, and the experience of the whole development reconsidered to better serve multi-purpose journeys and changing consumer behaviors.

RANDY GALANG

Principal | LA



Seaport San Diego
San Diego, CA

HOW WE WORK: THE PLACE EXPERIENCE DESIGN PROCESS

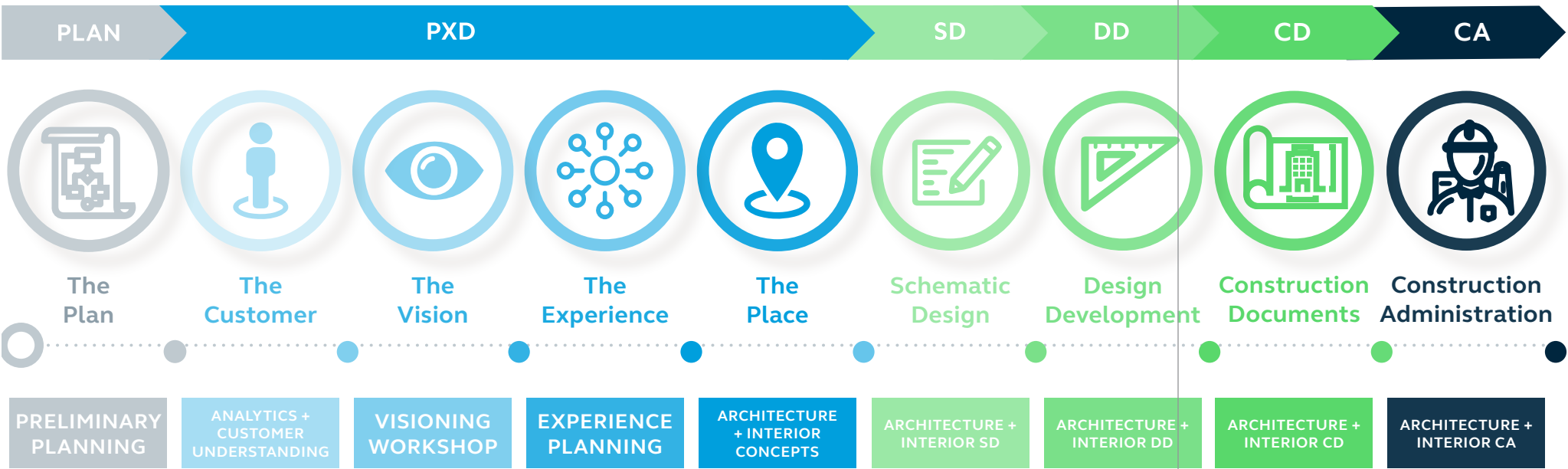


Figure 1: The Place Experience Design Process is integrated across disciplines from the start—avoiding the pass the baton approach from one discipline to another—to create a clear and comprehensive understanding of the customer base, vision, experience, and place during the conceptual phase.

approach the design process into what we call “Place Experience Design,” see Figure 1.

New consumer behaviors require a focus on the whole lifestyle, appealing to the many people who no longer crave ‘stuff’ and instead crave experiences. The new consumer makes conscientious purchases and cares about community, creativity, and connectedness. This mentality carries over to their preferences in every environment, from the way they consume, to the way they live, to the way they work. They want to [rent everything](#) that represents their new, now, and next. There is a dramatic evolution in the way they use buildings and spaces. Through their [digital overlay](#), they can seamlessly have what they want, when they want it, how they want it.

To appeal to the new consumer with a blended-use approach, internal and external spaces can be woven together and uses layered upon one another. Spaces are considered not in isolation but instead as part of a wider lifestyle ecosystem that feeds itself and actively supports the new ways in which people live, work, shop, socialize, and play. Each space should flow into the next, so that a person working can easily grab a coffee downstairs, take a break in nature, get their check-up with the doctor, or hit the gym. Spaces for the new economy have a variety of uses at different times of day—from a yoga studio in the morning, a pop-up shop in the afternoon, to a gallery space at night. It is time that we think of these flexible environments in constant motion and function, and not static and singularly purposed.

The future will be flexible above all. Design of retail spaces will focus on nimble, fluid tenants who are innovative, lean, and hyper community-centric. From the office to the gallery to the event hub, green open spaces will be the connective thread that stitch everything together. In this way, the 15-minute city becomes a 5-minute hub. Read more on how our retail environments, particularly traditional shopping malls can be transformed for the new consumer [here](#).

This approach to design and development cannot be done with each discipline operating in a vacuum. It requires a fully-integrated team from day one whose focus is on knitting together every space, creating intentional and unexpected friction points between uses, and crafting a story that users can see and feel throughout their journey.



Ballston Quarter
Arlington, VA

Repurposing assets & repositioning urban cores: How can buildings and spaces be reclaimed for the next generation of economic vitality?

Strategies for revitalizing our vacant spaces.

A turn towards housing and the lifestyle ecosystem that residential buildings now offer presents perhaps the biggest, most feasible opportunity for central business districts to recover. To do so, the repurposing of our urban cores needs to be explored in a way that investors and property owners can recuperate from what used to be a thriving environment.

We are no longer in an era of ‘build it and they will come.’ Not

surprisingly, cities saw [historic population losses](#) last year as a result of the pandemic. The dwindling number of people commuting to the office signifies an emptying of our urban cores, and cash strapped transit systems are suffering. More and more people are living, and staying, in the suburbs. Urban sprawl is on the rise, creating an expensive, pollutive, and complicated challenge to provide the necessary infrastructure for vast and growing metro areas.

Today, most central business districts are only about 60% occupied. A lack of housing in central business districts emphasizes the problem, as many cities have pushed housing out for economic and racially motivated reasons. The challenge is not just a matter of quantity, but quality, too. Much of the surplus office space in the world is not fit for the needs of the modern worker. 80% of the real estate stock in Manchester, U.K., is below grade B. In the U.S., the excess office space started accumulating after the 2008 subprime mortgage crisis when demand dwindled. Regardless, the supply grew. Substantial tax breaks and subsidies fed into this growth, while companies like WeWork started leasing office space without the customers to fill it. In a recent report, U.S. office buildings could take a [\\$500 billion loss from their pre-pandemic value by 2029](#).

There are two solutions: change a building’s use or make it better. Architect Carl Elefante famously

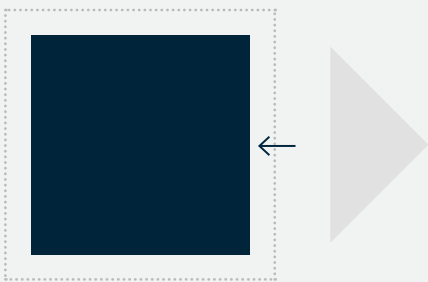
The pandemic ushered in the era of hybrid work. Today, we work from our offices, kitchen tables, local coffee shops, or all of the above. Companies no longer need ample office space, begging the question—what are we to do with all of the square footage? How do we decide what to keep and what to change? And how do we go about changing it?

STUART OLDRIDGE

Principal | London

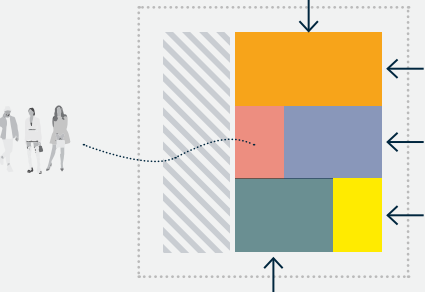
SHAPE

There are a number of different ways we could begin to think about re-shaping building stock that is no longer fit for purpose. The following diagrams may be considered on the scale of the individual unit, a single building or an entire city block - with three key approaches of Reuse, Rethink or Reshape.



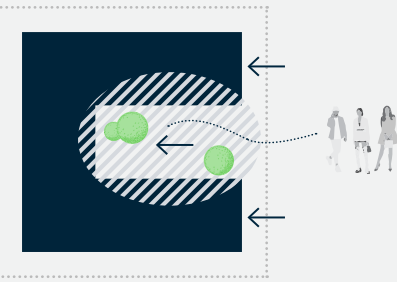
REUSE

A retail anchor store or building is reconfigured and reprogrammed. A new life is injected into an existing single use shell with multiple curated uses within one footprint. The block is broken down into multiple components and re-stitched to form a vibrant new product with maximum permeability and multiple active frontages, rather than a singular entry point. If this is a retail unit - optimum sizes are given to each of the units to suit current demand.



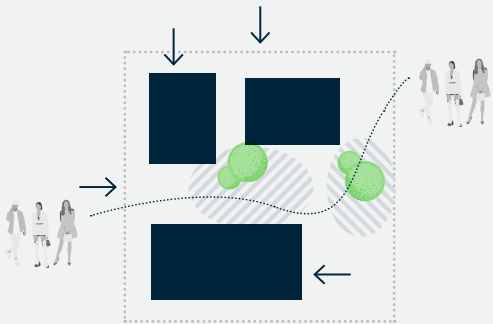
RETHINK

A series of courtyards or spaces are cut out of an existing form, enabling new streets or exterior spaces with continuous frontage both on the ground plane as well as new facades created above - so that optimum floorplates can be re-modelled to suit a number of different uses - hotel, office or retail around bustling green public amenity.



RECREATE

The existing building, unit or city block is no longer seen fit for purpose or part adaptation so is removed - to optimise value of the site, maximise public realm benefits and create new buildings at optimum floorplates to suit multiple uses for an entirely new blended scheme.



once said, ‘the greenest building is the one that is already built.’ For many years, as part of the race for sustainability and the drive to meet net zero, there was a temptation to mindlessly demolish buildings with visions for new eco structures in their place. However, the decision to demolish or refurbish a building is not so straightforward. It comes down to embodied carbon. Demolishing a building can at times be the more sustainable path, depending on the amount of energy it takes to change a building’s

core in the refurbishment. A new building can also be designed as highly efficient, lowering the nonrenewable energy and emissions in its life cycle.

Around the world, a transition is underway to focus on the public realm and overall resident and user experience. In China, for example, the focus has shifted from global economic development to an internal focus on community, experience, health, and sustainability. These endeavors include public realm

and urban renewal projects, spaces where ecology was previously sacrificed for short-term profit. This growing emphasis on sustainable, low-carbon development and redevelopment projects emphasizes true mixed-use living at the community level.

To revitalize these areas, office spaces are hybridizing with other programs like residential, or transforming into a new typology altogether. The proliferation of hybrid work models has created

this flexible lifestyle, retail has proven to be the easiest typology to turn into coworking spaces.

As for office space, the easiest transition is to residential. This pivot would require unique explorations for remaining office assets to provide a fully livable community within existing central business districts. Schools, for example, will be necessary. Can an office building, or several floors of one, accommodate a school? Would it offer safety and security? What about cultural spaces?

There are three key aspects to this process of exploration and design. First, redefine spaces and places according to changing citizen needs and what they value. Second, recraft existing assets by curating, blending, and reshaping the experience. Lastly, respond with a mixed-use approach and specialisms to create a rich tapestry of lifestyle experiences. Design can and should weave in new layers within the confines of historic and modern structures, in existing towns and cities, which have built up over decades and centuries. In this way, we can maintain the diversity of building types and experiences that great cities offer.

These rapid transitions would be a lot easier to manage if changing a

building’s program were not such a challenge. In [last year’s Forecast](#), the concept of the Universal Building envisioned a resilient future for commercial real estate, one that allows a building to easily change its use, negating the need for redevelopment. The ‘framework building’ is a hybrid mixed-use structure that blurs the lines between any one program and use. Changeable systems, structures, and modules create this flexible platform which allows a program to shift according to market needs. What were previously single assets will benefit from the plurality of life a Universal Building offers. More on this [here](#).

Shopping malls will become...what?

Four strategies for the reinvention of the so-called ghost mall.

Traditional shopping malls were declared dead at the onset of online shopping by a slew of media outlets. It's no different than the expectation for Kindle to replace printed books, and for Netflix to make movie theaters obsolete. Just as we still love the feel of a book and a Friday night trip to the movies, people will continue to congregate in malls for convenience, community, and for the enjoyment of shopping in person. It's true that our shopping malls must change to fit our evolving lifestyles, compete with the efficiency of online stores, and offer experiences for the new

consumer. Contrary to popular belief, however, our suburban areas will not be depressed by thousands of vacant shopping centers. While some will bring more value as an entirely different use, many have long-term viability if they are creatively reimagined to meet shifting consumer needs and if they are better integrated into surrounding communities.

There are four strategies that will allow us to reinvent our shopping malls, giving them new life as well as offering our communities new ways of sharing experiences and connecting with place.

”

As we consider what to do with our shopping malls, it's clear that retail will continue to dominate these developments in their next chapter—things will simply look and feel a bit different. The new mall will require a narrative journey that drives a careful choreography of blended uses, while maintaining retail at its core.

MATT BILLERBECK
Principal | Seattle



Riyadh Front
Riyadh, Saudi Arabia

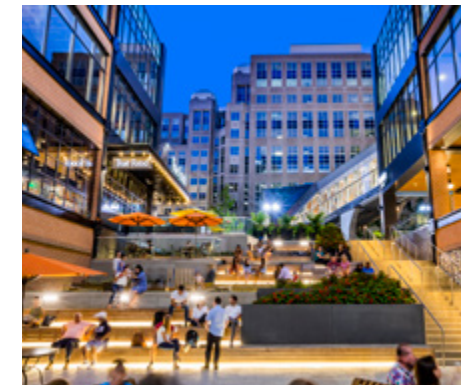


360 Tennis Expansion
Kuwait City, Kuwait



Reimagine Anchors of the Future

The birth of shopping centers brought fashion to the suburbs. They gave [teenagers a place to hang out](#) and families a space to eat and buy everything they needed at once. They were anchored by big-box department stores, many of which are now failing. Only a select few continue to thrive, a testament to their ability to reinvent themselves as experiential destinations. Outside of those retail innovators, savvy owners and developers are turning to entertainment retailers and venues as a means of attracting visitors, and they are capitalizing on those dark department store spaces. A thoughtful program of experiential offerings—whether a single tenant or a rotating list—can bring vital interest back to malls, while giving people a reason to shop and stay a while.



Return to the Community

The plight of yesterday's shopping malls was their tendency to operate on an island—an approach made by design, but that is no longer effective in attracting today's audience. Tomorrow's malls will be seamlessly enmeshed with their community. In this way, the mall reflects the community's values and culture while meeting consumer needs. Blended-use environments will allow retail, residential, hospitality, and other uses to overlap along public green spaces (read more on how to achieve this [here](#)). Retail will be the connective tissue of these environments, but not the only experience offered. Designed as a local hub, rather than a traditional mall, the space will become a neighborhood gathering place, where people can purchase goods, but also have access to vital, everyday services: community healthcare, access to fresh food, gyms, and pop-ups featuring local vendors.



Revive Main Street

To make these spaces successful, they can no longer act as barriers to communities, with seas of parking lots and experiences that only face inward. In some cases, and especially in more urban environments, the mall will be completely “de-malled.” In other words, buildings will be deconstructed and turned inside out, peeling away the walls and roofs until a new main street is revealed, allowing pedestrian and limited vehicular traffic to return to its center courts. The result is more so a town center or retail high street. [The now-empty parking structures will be transformed into parks and outdoor venues](#). When complete, it will be hard to recognize the remnants of the enclosed and insular retail center.



Repurpose Entirely

Some existing shopping centers will need to be completely reinvented. They may shift their purpose from providing consumer products to servicing consumer industries with fulfillment and distribution centers. Others will pivot to education or healthcare campuses, with a focus on technology, life sciences, or higher education. Shopping centers today are often positioned in key locations near major highways or transit lines, which are critical to the future success of any mixed-use development. The opportunities to reposition and evolve their structures and facilities are endless.

What anchors are driving tomorrow’s mixed-use developments?

Transitioning from single- to mixed-use, this is where local economies can be stimulated and individual assets can grow to become community epicenters.

- CULTURE
- FOOD & BEVERAGE
- HEALTH & WELLNESS
- HOTELS & HOSPITALITY
- RESIDENTIAL
- RETAIL
- SPORTS & ENTERTAINMENT
- SENIOR LIVING
- TRANSIT
- WORKPLACE

With a localized and responsive mix of retail and leisure concepts, the mixed-use development of the future offers a fresh approach to urban living. Whether led by retail, residential, workplace or sports and leisure, these hybrid assets are fast becoming the solution to many repurposing and repositioning discussions, with these factors known to make the transition successful:

1. **A focus on the health & wellness:** Providing neighborhood-scale services that promote physical and emotional wellbeing.
2. **Placemaking is connection-building:** Blending uses with a holistic perspective creates a space that is both inclusive and serves as a catalyst for future growth.
3. **Adaptability, Flexibility & Phasing:** Thoughtful creativity to ensure that the spaces remain knit together even as the new joins the old.
4. **The mall as an invitation:** Carving out spaces for meaningful interaction that blur the boundaries between the site and the public for which it is designed.
5. **Mapping the Experience:** Curating positive and engaging experiences with an intuitive and emotional journey.



Workplace

What will the experience of tomorrow's worker be?

People are prioritizing flexibility over salary.

The average person spends about one third of their life at work. Now that going to the physical office is a choice for many organizations, employers are considering how to make the physical office a compelling reason to come in. This comes with its challenges in a post-pandemic world of remote and hybrid work standards. For companies trying to implement strict rules around in-person work, like Musk's Twitter, employees are giving serious blowback. According to Owl Labs, if asked to return to the office full time, [67% of remote workers](#) say they would expect a pay increase to make up for the additional costs. Their concerns are valid—it is reported that [in-person workers spend an average of \\$19.11 more](#) each day than when they work from home due to commuting, food, and clothing/laundry. 46% would stay in their role when asked to come in, but “quiet quit.”

Aspects of pre-pandemic work hours—daily commuting, missed dinners, skipped workouts, and family events—are no longer fathomable for many. Employees established new rhythms of working—flexible in both time and place/physical location. The

work-from-home arrangement is so appealing to many that workers are [willing to sacrifice up to 5% of their salary](#) to continue working from home, proving that time is, in some cases, becoming more valuable than money. Many workers can be as effective and companies as profitable when working remotely.

The evolving approach to in-person vs. hybrid work is not universal: Europe has more fully adopted a hybrid model,



The trend is shifting toward the empowerment of the worker, and if companies are looking to stay relevant, attract the best talent, and be seen as an innovator, they should take an approach that puts people first.

JODI WILLIAMS
Principal | D.C.

whereas the U.S. is more divided on the matter. In China's densely populated cities, few are given the choice to work remotely, and most people have returned to the office for at least three to four days a week. In some areas of the world, the idea persists that if others cannot see one working, then one is likely not working hard enough.

The office of the past was highly standardized and focused on individual heads-down work. Today, companies must take a nuanced approach. Instead of prescribing an office space, they must listen to their employees and craft the working environment accordingly. The experience of the future worker will be driven by the desire to be in environments that elevate us mentally and physically. People will come into the office if they see the value in doing so: an equation determined by culture, economics, urban transit, and day-to-day life.

This is not necessarily a bad thing. Rather than force the issue, companies should be aware that workers are willing to sacrifice for a flexible work environment. This pause for reflection and ideation also allows companies

the opportunity to look at how they want to function as a collective both in the digital and physical realms. To expand their reach as they navigate the hybrid world, companies should institute improved communication and deeper, more intentional engagement. This approach acts with the wellbeing of individuals in mind, guiding people through moments of change with clarity, consistency, equity, and trust.

When employees come into the physical office, there must be a clear purpose and the space and tools which to encourage employees to come in. Read more about the office of 2023 [here](#).



Valiant Integrated Svcs Full Svcs
Herndon, VA



What is the role of the office in 2023?

The equalizer, the incubator, the culture center, and the showroom.

The role of the office will continue to be in flux across the next year as companies and their employees negotiate the best approach to work. In 2022, the office served more so as an occasional destination for most people. Now, companies like Google are requiring their staff to return to in-office work as part of an effort to preserve social capital, or the connections and trust between people that, they believe, allows them to work most effectively.

As company policies, technology, and the built environment are shifting in accordance with our new ways of working, so too are individuals. With a few years of remote work under their belts, people are now mixing and matching the ideal home and work balance that is best for them. Residential properties are following suit by offering more robust workspaces for tenants, fit with the technology and community spaces that the traditional office previously provided. Read more about this [here](#). The office should not try to compete with the evolution of our homes but consider how it can be a partner to them, by implementing lessons learned

over the past couple of years and reimagining itself as a key part of our social fabric. With the tools that employees need to work available at home, people will need to see a purpose for coming into the office. The first is framing the office as an equalizer. For those who are not required to come in, the office can remain appealing by offering what they cannot get at home. Though leadership and some employees might be able to work in separate offices and libraries that offer the privacy and focus space they need, there are many employees who are stuck working in studio apartments, or at home with their kids. The inequities of workspace at home, such as fast internet, ergonomic workstations,

and even the ability to form relationships with other people in the company, can be solved with democratic workspaces.

Similarly, the office increases access to critical internal departments. One of the primary concerns with at-home work is the lack of easy communication with leadership as well as other team members. Design can offer spaces that foster these interactions and encourage people to come in and use them, offering private, comfortable, and safe spaces for important conversations, or open and engaging spaces for collaboration across the company.

[62% of workers say](#) that they are more productive when working



The office of tomorrow will be a present-day town square, a space that brings together the larger group to do more than produce. It is a place where people are welcome to connect, share, and celebrate their common goals and identities.

LIZ WOZNY
Principal | D.C.

remotely. Rather than creating an office for people to put in hours of focus work, the office can become an incubator that gives people space to connect, collaborate, and ideate. It will leave behind a toxic culture of long isolated desk hours and instead create space for workshopping, making, testing, and optimizing. In this way, onboarding, training, and IT support sessions are not a chore, but elevated exercises set in engaging, technology-driven labs.

Though remote work has proven to be effective, aspects of on-the-job training, mentoring, feedback, and upskilling are best delivered in person. The office thus serves as a cultural epicenter that is shaped by a brand experience, much like retail environments, for employees and clients. The mission, vision, and values of a company can be illustrated through design and technology and lived through the work and collaboration of employees. The office is a place where teams and peers can gather, not just to work, but to break bread, debrief, and grow together.

Finally, the office can take on the role of the experience centre or showcase. In other words, a tool for talent and client recruitment that allows people to fully engage with the experience

of the company. Entering the office should feel like becoming part of something larger. In this way, the new office can offer what employers have been trying to entice employees with all along—social and business connectivity. These interactions extend beyond talent and clients to include people from the surrounding community in public-facing spaces or innovation hubs created through partnerships with universities.

In the race for quality office spaces, many will be faced with the challenge of low supply. Building a new office space comes with high expectations and more of a hospitality feel to them. People expect a concierge, places to eat and drink, and amenities like gyms and rooftop patios. These perks, however, come with a price. There are a few quick, cost-effective wins to retrofit a building and bring it up to par. For the next year, the focus will be on flexibility and how it can creatively offer people the multiplicity of work environments they seek.

There are a few practical approaches that offices can take to create a successful work environment. Design should explore how offices can offer open space for collaboration while minimizing distraction.

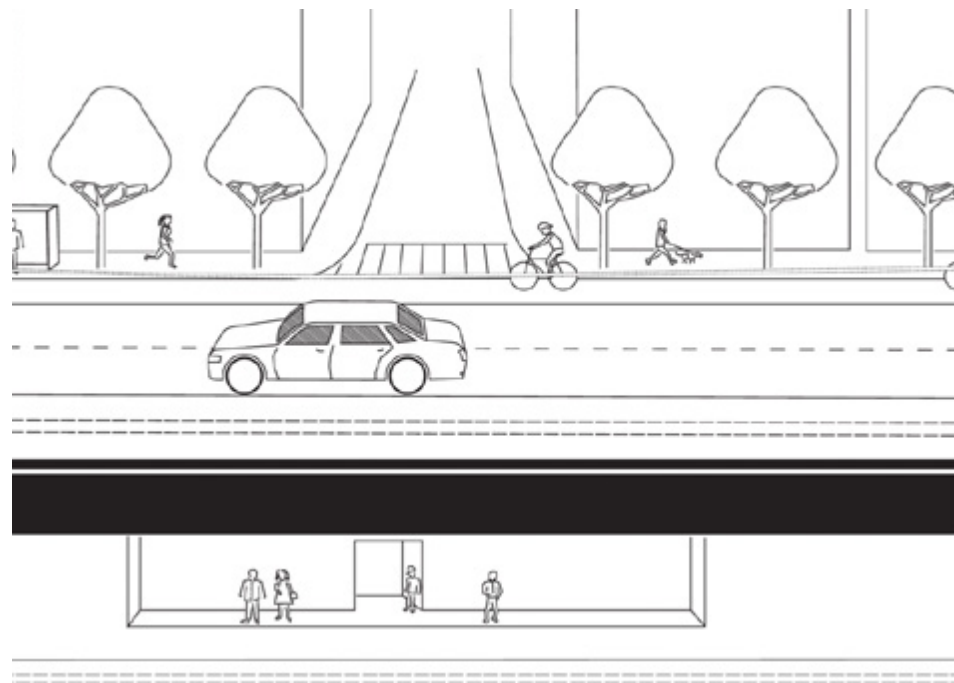
There is a way in which spaces can contribute to some of the physical and mental challenges we face at work. These include headaches, eye discomfort, irritability, and a lack of privacy, all of which can be alleviated with bright daylit spaces, biophilic elements like indoor plants, and views of the outside world. Many of these initiatives fit together with sustainable strategies, like carbon offsetting, which are becoming increasingly important to employees. Read more on how to transform existing buildings to meet the new standard [here](#).



Enterprise Community Partners
Columbia, MD

Can workplace be a catalyst for place?

How to create microscale city environments driven by workplace.



Design is influenced and molded by social upheavals. One way in which this has manifested over the past few years is in a growing desire for many employees to continue working from home, to reduce time wasted on commutes, and to redefine the balance of life and work. Design has responded by creating and communicating form with how it relates to our days, such as the concept of the 15-minute city, revealing how interventions can create time for all of us.

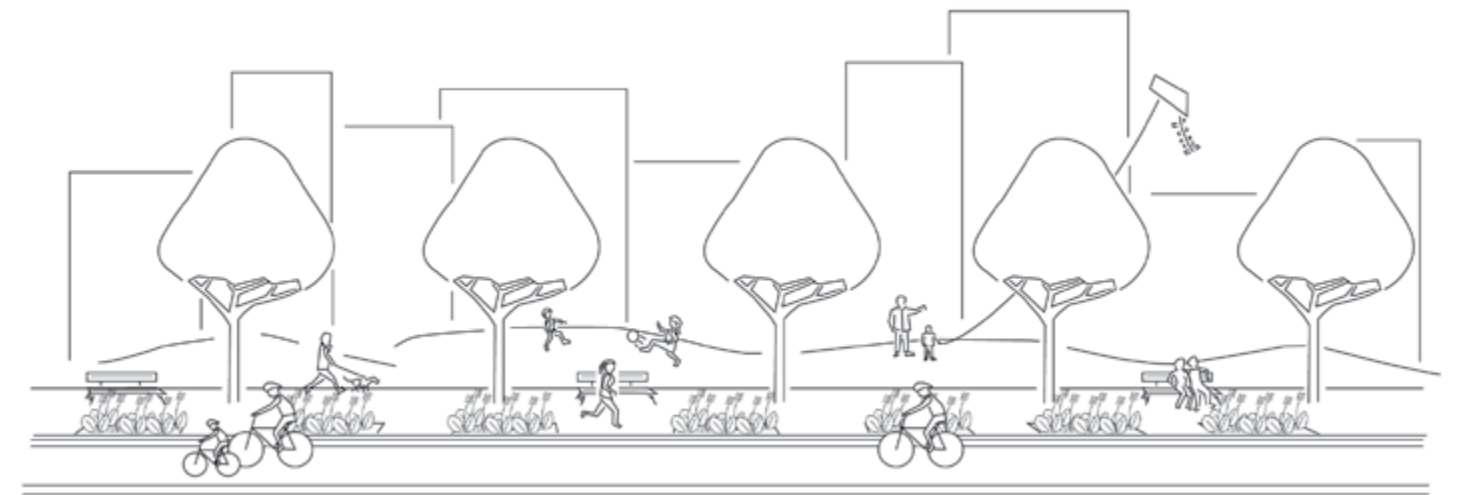
This shift is clear in the rejection of stand-alone spaces, such as suburban office parks, which were dying out long before the pandemic. Termed “[Pastoral Capitalism](#)”, these post-war office parks were shaped by the idea that workers needed to be isolated in nature to work well. As early as 2015, [Newmark](#) reported that 14 to 22 percent of suburban office space in the United States was obsolete. Though there were attempts for the suburban office park to make a comeback, the addition of a few amenities has not proven to be enough to

attract people. Now that most employees can successfully work from home, standalone office parks, regardless of whether they have a gym or a Starbucks, have emptied out. The campus—Apple, Google, Facebook—is a new riff on the office parks of the twentieth century. The campuses of today take a similar approach, offering all the perks of an urban environment in one suburban destination. However, creating a campus is not the only way in which workplace can bring new energy to a place and draw people out of their homes.

There are two different forms this can take, one in urban space and the other in a suburban or rural environment: the 24-hour building and the 5-minute neighborhood.

24-Hour Building

The 24-hour building operates in urban areas and is driven by the workforce within it. The idea is that a person can work, live, visit, eat, and play all without having to leave. It mirrors the experience of the city itself in that anything a person wants is at their fingertips. As a fly-in and fly-out concept, visiting employees can stay at a hotel in the building without



having to commute or navigate a new city. They can eat, purchase goods, and go to work seamlessly, with everything they need for a few days. Similarly, employees can stay in short-term rentals and new employees can find a place to live without hassle. A successful version of this blended-use environment is risk-averse and allows the workplace to energize all other spaces within the building—and vice versa.

5-Minute Neighborhood

The concept for the 5-minute neighborhood takes place outside of the city center in an environment where people are trying to reduce the time they spend commuting. We see this in the proliferation of fringe and edge cities, which serve as transition zones between urban and rural centers. The 5-minute neighborhood similarly blends the uses of the 24-hour building,

though it is less concentrated in one space and may be more cost effective. While the workplace is the catalyst for these spaces, they require other uses as well as access to mass transit to become populated. This is a particularly effective option for companies with workers who are no longer willing to waste time on long commutes to the office in the city center but are willing to take on shorter commutes.

Both approaches aim to revitalize workplace as well as its adjacent uses with a holistic approach to place. By creating microscale city environments that are seamless, easy to navigate, and offer the resources a person needs throughout their day (or many days), workplace will once again become a relevant part of life.

As we debate whether the office is a relic of the past, there are ways in which workplace can be reimagined to function as a catalyst for place. This is best achieved by creating microscale city environments—within a building or mixed-use development—designed with workplace at their core.

DENNIS GAFFNEY
Principal | D.C.

Mission Critical





Source: Top — [Innovate®](#)
Bottom — [Prasa®](#)

Is liquid immersion cooling the future for data centers?

How liquid immersion cooling can help solve the data center energy usage problem.

Data centers are some of the biggest energy hogs on the planet, often consuming as much as 50 times the energy of an equally sized office building. To operate, data centers require power, which produces more heat, necessitating energy-intensive cooling, which then consumes even more power. At this point, we are unable to gauge just how much energy the world's data centers collectively consume—the number varies depending on the source. The Office of Energy Efficiency & Renewable Energy estimates that data centers account for approximately 2% of the total U.S. electricity use. Globally, data centers are reported by Lawrence Berkeley National Laboratory's Center of Expertise for Energy Efficiency in Data Centers to account for as much as 1% of [worldwide electricity usage](#).

In response, liquid immersion cooling has gained a lot of traction in recent years, especially with the advent of cryptocurrency and high-performance computing. The global electricity usage for crypto assets is [estimated](#) at

120-240 billion kilowatt-hours per year, which is equivalent to that of entire countries, such as Argentina and Australia. As temperatures rise, mining hardware and traditional data centers will become less efficient and possibly fail.

There are two types of immersion cooling, single-phase (1-PIC) and two-phase (2-PIC). In 1-PIC, a dielectric liquid remains in the liquid state throughout the cooling process. In 2-PIC, the dielectric liquid changes state and becomes a vapor.

While liquid immersion cooling technologies both eliminate the use of computer room air handlers (CRAHs), computer room air conditioners (CRACs), and may eliminate the use of chillers, 2-PIC comes with a higher initial cost. However, when looking at total cost of ownership (TCO), the 2-PIC is more favorable due to its slightly lower partial Power Usage Effectiveness (pPUE). PUE is a metric that shows the ratio of the total amount of energy a data center uses divided by

the energy used by just the IT equipment alone. Partial PUE relates to the energy efficiency of individual components of a data center. With 2-PIC 1.02-1.05 is an achievable yearly pPUE (climate dependent), while 1.03-1.07 is possible for 1-PIC. Some of the other advantages of 2-PIC over 1-PIC is greater cooling density (higher kW per rack unit), which yields the ability to accommodate higher capacities per rack (over 250kW per rack), and the ability to eliminate the requirement for a cooling distribution unit (CDU).

With 2-PIC, servers are immersed in a bath of dielectric, fluorocarbon-based liquid with a relatively low boiling point compared to 1-PIC. This liquid is in constant contact with the server boards. Resultant heat boils the liquid, producing a gaseous vapor through phase change, hence the name 2-PIC. The gas is then condensed back into a liquid using water-cooled condenser coils located at the top of the sealed rack chamber. The condensed liquid is then returned to the fluid in the bottom of the rack chamber to repeat the process.

With 1-PIC, servers are typically immersed in a bath of dielectric, hydrocarbon-based liquid similar to mineral oil with a comparatively higher boiling

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The underlying principle of why liquid immersion cooling is so efficient is that liquid is a much better conductor of energy than air—conducting about 22.4 times the amount of energy.

JEFF GYZEN
Principal | LA

point. Like 2-PIC, the liquid is in constant contact with the server boards, but here the liquid does not boil. It remains in its liquid state and is cooled in a forced flow manner by pumping the liquid past the heat sinks of the IT load, then through a heat exchanger in a CDU. Hence the name 1-PIC.

Server removal and maintenance is possible with both systems without disturbing and shutting down other equipment in the same bath. The fluid used in 2-PIC will evaporate during removal from the bath and condense on the coils inside the system, reducing fluid losses. The 2-PIC server is ready to work on immediately once removed. Typical fluid losses for 2-PIC systems are lower than 2% per year. 1-PIC servers using hydrocarbon-based fluids will require a cleaning station to remove the excess

fluid from the server before work can be performed.

As our need for computing power continues to grow, liquid immersion cooling is a more tangible, sustainable, and energy efficient method for cooling down our data centers.



Are battery energy storage systems (BESS) a viable replacement for diesel generators?

Weighing our options for phasing out diesel.



The advantages of BESS over diesel generators are numerous. Diesel generators have issues with increasingly regulated emissions, noise, and fuel storage. They require regular testing and exercising as well as ongoing maintenance to ensure reliability. By comparison, BESS are fast, reliable, virtually maintenance free, and require no fuel storage. They are also quiet, environmentally friendly, and last for 20 years or more.

JEFF GYZEN
Principal | LA

There are an estimated 20 gigawatts of backup diesel generators in service across the global data center industry. While their long-term negative impacts to the environment are well documented and undeniable, there are now viable alternatives that many of the big players are embracing. In July of 2020, Microsoft stated that it would eliminate its reliance on diesel fuel by the year 2030, and earlier this year announced that they would

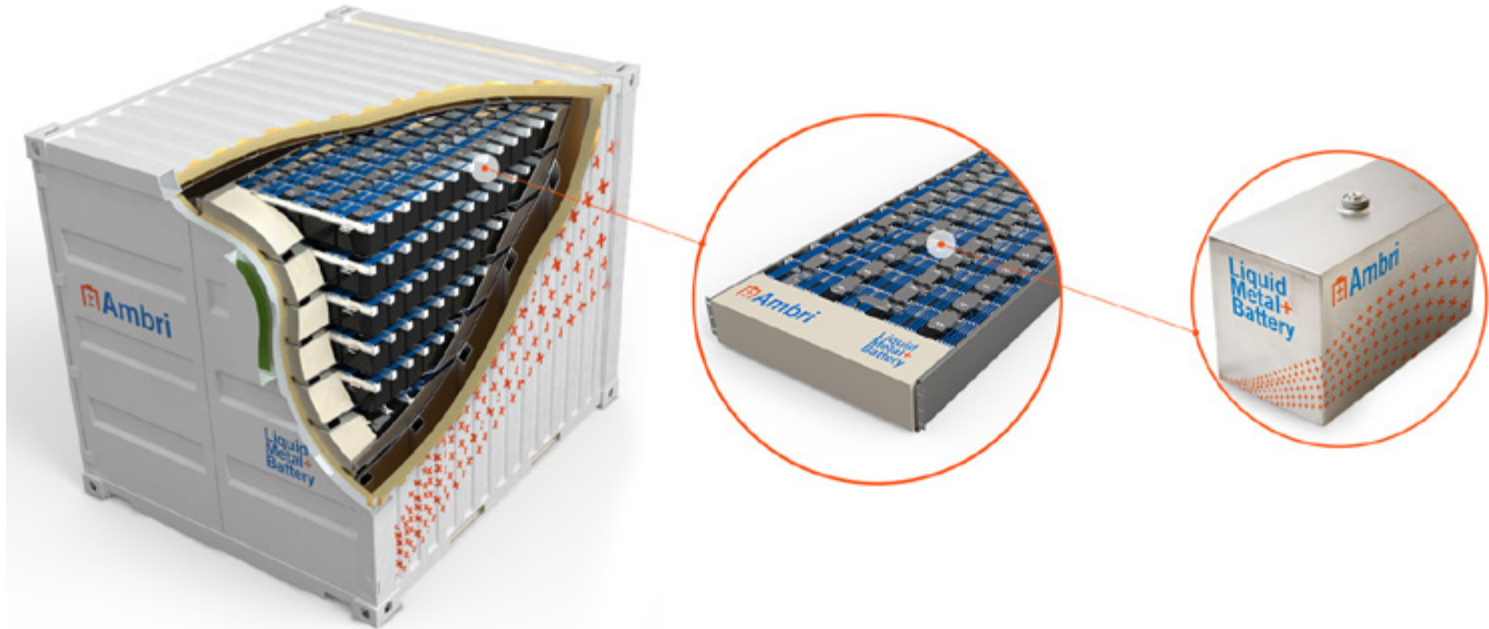
be installing high temperature, ‘liquid metal’ batteries to back up one of their data centers. Similarly, in December 2020, Google announced they would be using large BESS to replace the diesel generators at one of their data centers in Belgium. This year, Meta followed suit and set up of a consortium to measure the emissions benefits of using large BESS.

Currently, lithium-ion batteries dominate the BESS industry. At worst, they are expensive, do not respond well to being fully charged or discharged, are extremely sensitive to high temperatures, and are inherently flammable. However, the biggest hurdle with BESS as replacements for diesel generators comes down to data centers and other critical facilities requiring long-term backup power, sometimes for days at a time.

Typically, BESS are designed to provide backup power for no more than four hours. Unless they are combined with more traditional backup systems, they are only feasible for short duration outages. Fortunately, the average U.S. electricity customer experienced just over eight hours of power interruptions in 2020 throughout the entire year. The best states average between 44 minutes to 101 minutes for individual outages, while the worst were averaging considerably more, ranging from 29 hours to 60 hours.

The experience in the U.S. is a picture of one country at one point in time. Across the world, climate change and soaring energy costs are increasing the number of blackouts, and many anticipate [a new age of rolling](#)

Source: [Ambri](#)



System: 10+ Trays per 10 Shipping Container → Tray: 50+ Cells → Liquid Metal Battery Cell

[outages](#). Goldman Sachs [finds](#) that by 2023, a typical family in the EU could face energy bills of €500 per month—up 200% from 2021. In their global summary, The International Energy Agency [reports](#) that power shortages have caused rolling blackouts across Asia, and in some cases, energy-intensive industries have been directed to cut production.

If an outage was anticipated to last more than two hours, then having the ability to engage more traditional emergency generators fueled by either natural gas or perhaps Hydrotreated Vegetable Oil (HVO) early on would allow for the BESS to recharge and

thereby extend the four-hour window to possibly eight hours or more. If an outage were to last for longer than eight hours, as might be the case in a major natural disaster, load shedding protocols within the data center could be implemented or remote backup facilities could be utilized. The benefits of such a hybrid configuration would also extend to the environment and result in a substantial reduction in GHG emissions.

New advances in battery technology may all but eliminate the need for this hybrid model though. Community Power (CC Power) recently announced

the first eight-hour, long-duration, lithium-ion battery energy storage resource project. Project Tumbleweed will have a 69MW output and 552MWh capacity operational by 2026.

Elsewhere, liquid metal battery systems are showing promise and are well positioned to replace lithium-ion in larger scale BESS installations. Elements of Antimony and Calcium Alloy are combined with a solid salt electrolyte inside a sealed, insulated, and positively polarized stainless-steel case with a negative terminal at the top. The contents are then heated to 500oC (932oF) at

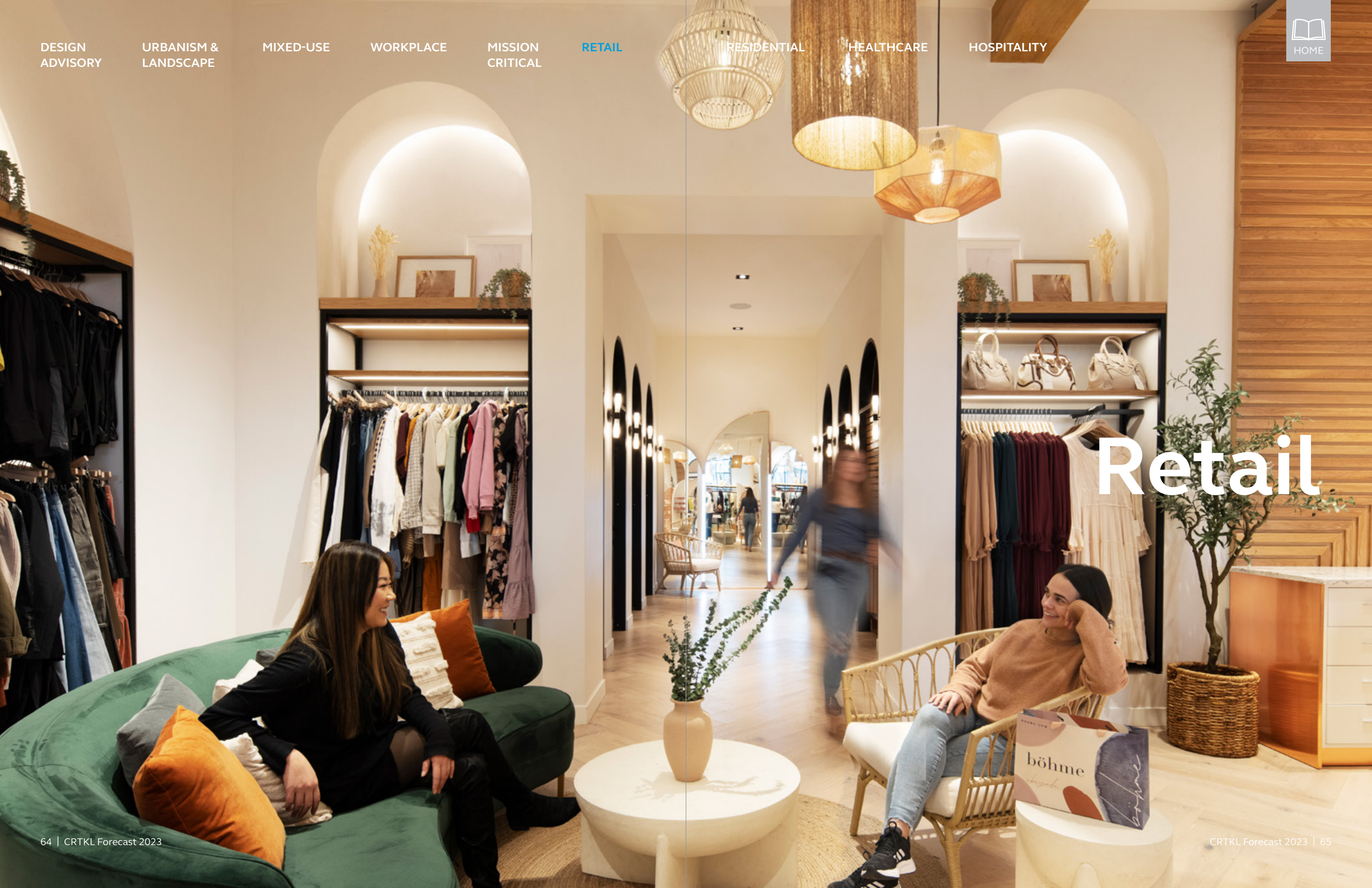
which point the metals and electrolytes become molten. The discharge process generates its own heat, eliminating the need for an external heat source.

With an efficiency of 80% and the ability to undergo tens of thousands of charge/discharge cycles with little to no degradation or drop in efficiency, liquid metal batteries

easily outperform lithium-ion. In addition, unlike lithium-ion batteries, their high operating temperature does not require cooling, making them suitable for any climate. As far as safety goes, liquid metal batteries have no safety issues compared to those plaguing lithium-ion batteries. In any case, the winds of change are in the air and diesel is on the way out.



Highmark Data Center
Harrisburg, PA



Retail

Designing the end-to-end retail experience – how are omnichannel expectations rewriting the script for brick-and-mortar stores?

How design contributes to a successful omnichannel strategy.

The last few years of shutdowns and the proliferation of online shopping has only solidified the need for brands to develop multiple channels to reach their customers. [80% of the companies](#) who launched new channels during the pandemic say that they plan to keep them. What was once a survival tactic has now transformed into an expectation from customers who are used to the convenience and efficiency of online shopping and seek the same seamless experience from brick-and-mortar. Though omnichannel strategies are nothing new, consumer behaviors are, and they are still influencing the way that we design.

To a certain extent, a retail project has historically followed a very basic formula, in which the design team meets with the store planning team to understand the retail space in terms of merchandising, flexibility, and aesthetic. Though those aspects of the design process remain valid, brick-and-mortar has for a long time been only one part of

Customer expectations for convenience and personalization have expanded the boundaries of store design into [in-person experiences](#) and service design. In response, brick-and-mortar is shifting to a more immersive and experiential role in the omnichannel strategy, while e-commerce will continue to fulfill customer demands for convenience.

MICHELLE DECKER
Associate Principal | NY

the omnichannel whole. Many have seen this shift as a blow to stores, but successful retail environments will realize that digital channels are not replacing physical ones. Instead, retailers should seek to create experiences in stores that are entirely different from any interaction that customers can get online.

A brand experience via a phone or computer is simply an extension of the experience that someone can get in store. The interaction with the brand—through connections with technology and

people, through color, material, sound, and touch—should feel familiar, intuitive, and automatic. In other words, the store should feel like the digital realm of the brand come to life and vice versa. And the interactions between the brand and customer online should carry over to those in store. We have seen this in the design of restaurants which now envision their spaces for the easy accommodation of ordering and delivery. For retail, this means anticipating the store journey well before a customer crosses the threshold. A true

‘end-to-end’ retail experience has learned from its customers online and plans a store around their needs, wants, and desires. Each step is choreographed to minimize friction and maximize opportunities to capture their valuable attention, compelling them to return.

As retail continues to evolve (more on this [here](#)), the way we work and who we work with will change too. The design of retail environments now requires the knowledge and expertise of a cross-collaborative team operating within a highly integrated process. This team can include people from planning to operations, marketing, IT, creative and C-suite professionals. With an ever-broadening set of influencers and stakeholders seeking to reimagine human experience in the store, retail could transform from a forgotten space into a new destination.



Petco - SOTF2
San Diego, CA



Food Hall at Crockett Row
Fort Worth, TX

Is the humble food hall the gateway to diversity and inclusion?

How food halls celebrate cultures and human connection.

Recent years have shown a significant growth in North America’s food hall market. Patrons enjoy the bustling energy and variety of cuisines, and chefs appreciate the low threshold into testing new markets and menus. They appeal to locals as well as tourists. Designed for flexibility and to be rebranded from one restaurant to another overnight, the utilitarian space of food halls is deceptively simple. But underneath the plug-and-play kitchens and changeable graphics is a robust platform for cultural expression and discovery.

While sampling, patrons sit at communal tables in relaxed spaces that encourage social connection significantly more than mono-cultured restaurants. In representing diverse cultures, the food hall becomes a culture of its own and meets the needs of the community.

Take for example, the HomePark food hall in Chengdu, China. Part market, part food hall, the space’s program evolves from day to night. Shoppers peruse the market in the morning,

surrounded by graphics inspired by traditional Chinese paintings and calligraphy. Lunchtime brings the businesspeople from adjacent commercial towers and the afterschool youth crowd raises the energy level as they are freed from their studies. By carefully curating the cuisine, merchandise, and entertainment program, the food hall deepens the community’s exposure to other cultures, all

“Inclusion begins with exposure to a variety of cultures. By their very nature, the food hall’s rotating assortment of vendors and their unpretentious, small-bite dishes make discovering new cuisines and the cultures that inspire them easy, causal, and fun.

YUWEN PENG
Associate Principal | LA

the while strengthening the culture of the community.

In addition to inspiring inclusivity through food, food halls can also act as a launch for chefs from underrepresented groups. Supporting a bottom-up economy, the enterprise provides chefs with the smallest investment to test their menu, work out the kinks, and gradually advance to a larger venue and presence. Food enthusiasts rush to be the first to sample what is new and quickly convince friends to gather. The assortment of vendors makes for easily agreed upon group destinations with something for every taste, removing the pain points of deciding what to eat and finding the food that fits everyone’s mood.

As the food hall evolves, expanded cultural entertainment programs and community outreach will play an important role in positive impact. Quite simply, food halls feed people and their curiosity. They are a primer to deeper understanding and inclusivity and diversity through food.

How can retailers pivot to drive Gen Z to the store?

Gen Z’s new expectations will transform the customer into a collaborator.

Every generation is a reflection of the culture of their time, which gives form to new habits that diverge from those of previous generations. In turn, these changes have an impact on how we engage with the built environment. The rise of the internet, social media, and ecommerce revolutionized retail in a way that was quickly embraced by Millennials. Now, as we prepare for what is next, we look to Gen Z for how to adapt and breathe new life into brick-and-mortar experiences.

Gen Z’s economic power is the fastest growing across all generations and their global income will surpass Millennials’ income by 2031. In terms of store renovation cycles, that is only one or two renovations away. For new builds, that moment will occur in the same amount of time that it will take to construct a development. As we plan for what is next, we need to understand the Gen Z drivers as the soon-to-be dominant spending power in the world.

Beyond aligned values, retailers will be most successful if they invite Gen Z to collaborate in their efforts to shape experiences. If customers can create universes online, or ignite a social movement through a social media app, then they can also revolutionize the brick-and-mortar experience. Gen Z wants ultimate control over their lives, and rejects any attempt to put them in a one-size-fits-all box. Instead, if retailers invite Gen Z to co-create the future space and experience of stores, Gen Z will

see themselves as a collective of content creators who are invested in the use and identity of a place.

Gen Z embraces more fluid identities and refuse to be typecast as only one type of person. Brands have the opportunity to fulfill many of their desires and, rather than narrow their target customer, should lean in and diversify by embracing variety and choice. Retailers that create space for ambiguity and newness rather than standardization will transform a



Having grown up in social, economic, and political turmoil, Gen Z is skeptical of what is presented as the truth, and demands information and proof. They are clear on their own values, which is reflected in their buying choices. Brands that share and support their values and ideals, will in turn appreciate a wider, more loyal audience. In this new age, authenticity is personal, and the next era of stores is all about personalization.

ROBIN ELMSLIE OSLER
Principal | NY

visit to the store from an order fulfillment task into an experience that is not to be missed.

As we envision the store of the future, Gen Z’s fierce combination of advocacy, identity fluidity, and

global perspective will create an opportunity for brands to design spaces that can flex their own identities. Stores will be spaces to collaborate and share ideals. The next generation coming to power will demand power be

shared, and brands and stores will be the perfect platform to strengthen that power.



Bowlmor AMF - Phoenix, AZ
Phoenix, AZ

Residential



Embankment West 2
Salford, Greater Manchester

Is subscription living the new home ownership model?

The future of living will be shaped by a rising desire for experience over bricks and mortar.

The sharing economy enables people to rent rather than own. Many, it turns out, prefer it this way. Since eBay's inception in 1995, subscription-based services like Netflix, Uber, Airbnb, Rent the Runway, and WeWork, have dramatically shaped how we eat, move, watch, and work. Their popularity only grew during the pandemic, becoming a daily tool to help us enact full lives within the confines of our homes. The global sharing economy will likely continue to expand, with [its market value projected to reach \\$1.5 trillion by 2024](#).

Rapid changes over the last few years have shown us that the future—near, mid, and long-term—is never fixed, but there are also [some fundamental human traits that never change](#). Broader societal trends like hybrid work and digital nomad lifestyles have long impacted workspaces and are now transforming the extent to which we see ourselves rooted in a place or community. This shift in how we view renting versus ownership comes when

home ownership is out of reach for younger generations—[Gen Z will face the largest average income-to-housing price ratio in 70 years](#). Due to the increase in interest rates from 3% to 6%, someone who can afford a \$2,400 monthly payment went from a being able to afford a \$554,000 home to a \$363,000 home¹. Meanwhile, rentals are keeping pace with the rapidly evolving expectations of consumers. Instead of a steppingstone on the way to ownership, renting is set to be the preferred option—for everything from movies and clothes to homes and cars.

This shift is personified in the digital nomad lifestyle. Increasingly, countries are functioning as havens for remote workers seeking unique settings and experiences—a work life balance in the extreme. They are encouraged by countries like Portugal or Estonia to obtain work visas and contribute to their local economies. In this way, they can work and live in an Airbnb they rent, travel around town through

a rideshare app, and deposit their checks in a digital bank.

The multifamily residential market is primed for offering the same perks and optionality that the sharing economy has capitalized on. Flexibility is the new currency. Renting allows people to change homes whenever they need or like, whether it is due to curiosity, a new job, lifestyle, priorities, or a relationship. This changes the brief for the home. Instead of choosing between urban or off-grid, flexibility or a single-family home, remote or traditional work, people can have it all. The sharing economy has now transitioned into subscription living. Never before have we asked for so much from our spaces. In response, we can design in a way that embraces all the varieties and possibilities of modern life.

Appealing to the 'renter by choice' starts with understanding that homes are just one part of a larger lifestyle ecosystem, one that ideally functions like the vision for the [15-minute city](#). In

1. John Burns, CEO, John Burns Real Estate Consulting ULI Trends Report Presentation to ULI Salt Lake City, November, 2022

other words, subscription living is determined by the immediacy of experiences, not brick and mortar.

The lifestyle ecosystem is both public and private, becoming a part of the city while offering all the extra services that make life more comfortable, convenient, and enjoyable. Schools, healthcare, recreation, restaurants, parks, and retail provide residents the 15-minute city experience (more on this [here](#)) within steps of their front door. The effect is threefold: every customer becomes a potential tenant, residents are happier, and returns are higher. The benefits of the social component are clear in that residents who know another person in their building are 50% more likely to renew their lease

and 90% more likely to do so if they know two people or more.

The individual units mimic the flexibility of the building. Adaptable and robotic furniture allow people to rearrange their living space according to the task at hand; an entertainment center becomes a workspace, a closet slides across the room making room for a virtual yoga class. Lighting, acoustics, and nature are key for the remote or hybrid worker. When looking for privacy, a resident can use phone booths in corridors, or for a change of pace they can stop by a lounge for coworking. These communal spaces are purposefully unnamed, as they are designed to be rearranged on the fly so that what was a coworking space in the

morning can seamlessly become a party or game room by night.

The lifestyle ecosystem is a function of the interplay between design and technology. Over the last few years, the introduction of work-related technology in our homes has developed a reputation for speeding up the pace of our lives and removing the tranquility from our personal spaces. On the other hand, technology, like a dishwasher or refrigerator, can make our lives easier. There is a way for advanced technology to bring a sense of calm into our lives, to give us more time rather than less, and ultimately enable connection rather than isolation.

Read more on how technology in the home can be advanced [here](#).

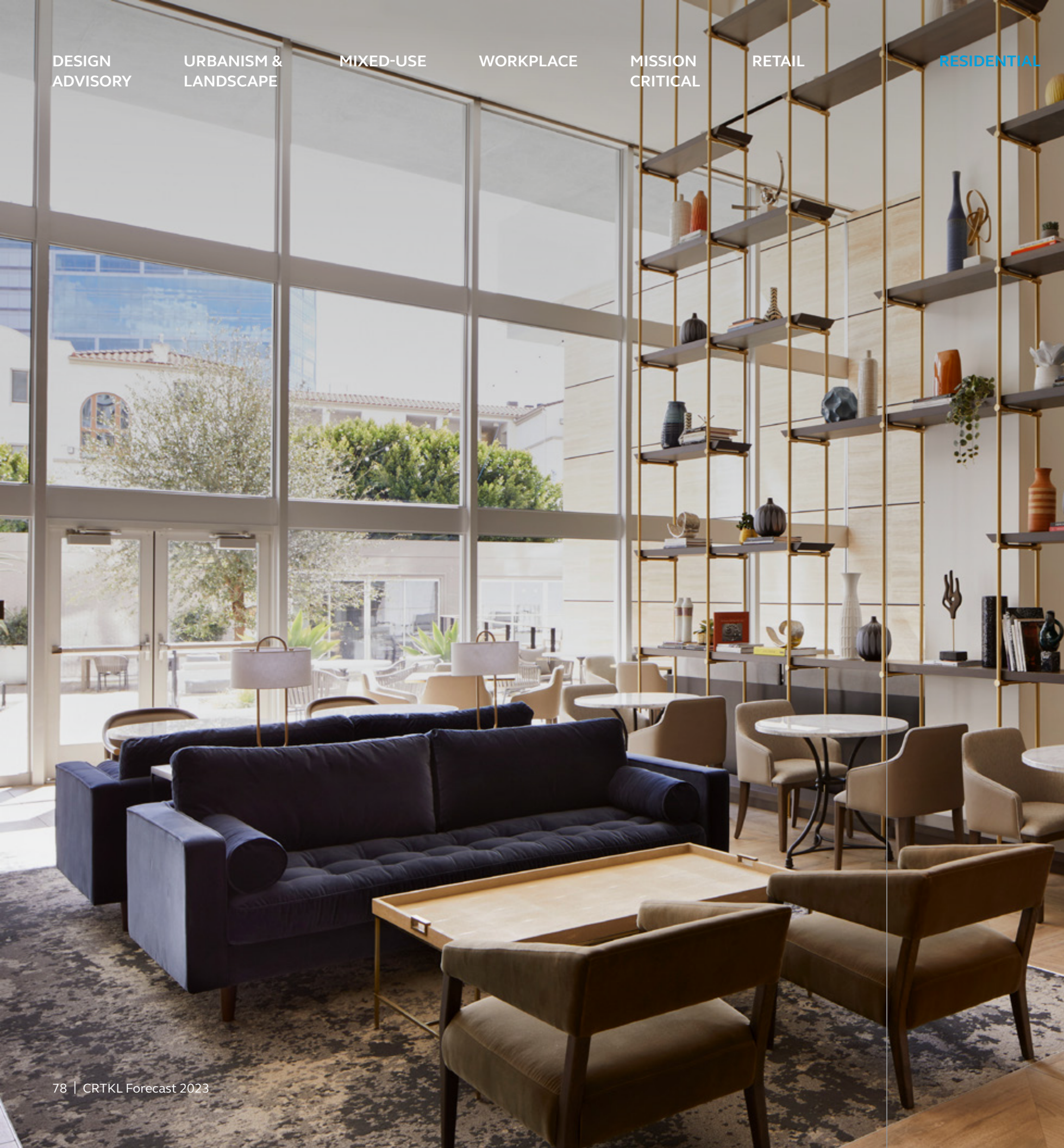


The next progression of residential spaces will be formed by residents who choose to subscribe to their homes—which will be as much as part of their ‘subscription living’ as their music, their desk space, and their clothes. Which home they choose will be based not only on location and cost, but on the lifestyle ecosystem that is offered. This evolution of living will be successful if the experience is rich and fulfilling and provides an authentic integration into the local community with firm assurance that their carbon footprint is measured and minimized.

JOHN BADMAN
Principal | London



The Gild 1210 N. State
Chicago, IL



Designing for an aging population – what forms will senior living take in 2023?

How we can maintain our most important personal spaces and relationships in senior communities.

By 2050, [the world's population of people aged 60 years and older will double](#), reaching 2.1 billion. The built environment is falling far short of such projections, exposing a serious undersupply issue. This presents a challenge of quantity as much as quality and variety. There is no one housing typology that suits all, and this remains true in the context of senior living, in which a mix of single-family, multi-residential, congregate living communities, and more, are needed to satisfy the nuanced needs of an aging resident.

Senior housing should look and feel like a home rather than a hospital. In the same way we are thinking about the consumerization of healthcare (more on this [here](#)), we need to think about the overall

experience of the senior resident and the varying degrees of care they might require.

Only 20% of the average person's lifespan is dictated by our genes, the other 80% is dictated by our lifestyles. Which is why designing places that support an active lifestyle is critical to longevity and health. A senior living community is about continuing to live one's life, just with added support. It is essential to remember that "home" means many things: a house, an apartment, a community. We must expand the traditional definition to encompass far more, and remember that senior living communities, while serving many purposes, must keep home at their core. The comfort and safety in our personal spaces can be applied to how we design.



The Watermark at Westwood Village
Westwood, CA

Maintaining a Lifestyle

For those moving into a senior community there is a fear that you relinquish control. While that may be true in some respects, it is up to designers to create places that support autonomy and identity, and provide residents with a sense of purpose. An example of this is including spaces for pets. [More than 70% of older adults](#) say that their pet helps them cope with physical or emotional symptoms, yet many of them are forced to give up their pets upon moving into senior communities. The incorporation of dog runs and washing stations allow residents to maintain their companionship. Additionally, moving into senior living communities often requires reducing belongings.

Adding storage options in modern senior communities gives residents the opportunity to hold onto more than just what may fit in a small closet. In this way, design can support a resident's past in the present.

Participating in the Gig Economy

By incorporating areas like hoteling workstations, maker spaces, or partnering with outside businesses to create a mixed-use environment, design can support individuals' autonomy to continue working should they choose to. A careful approach to unit design may include spaces that allow a continuation of lifestyles for part time remote work, for hobbies, or for a short-term stays by children.

Enhancing Mobility

Members of the Baby Boomer generation value trying new things, personal growth, healthy living, individual choice, and community service. It is time to design spaces that reflect their values and assimilate them into vibrant and thriving communities. Thoughtfully integrating senior living into existing urban environments and mixed-use communities gives residents and their families more opportunities to spend time together. Non-traditional senior living locations, such as facilities near schools and universities, foster intergenerational activities and can aid in lifelong learning. Integrating senior living into larger mixed-use communities also provides

spaces for partnerships with local businesses. From local shops, art studios and even ballroom dancing, older adults can take advantage of their neighborhood offerings and stay active within their community. Adjacency to public transportation, availability to car sharing, ride hailing makes the fear of losing one's independence feel less onerous.

Creating Celebration Spaces

Celebrating the large and small moments in life should not go away when moving into a senior community. The question we pose to ourselves is how we can better support life's moments through physical space. Communal kitchens allow residents to cook with and for their families and continue their holidays and

“We are living longer and aging slower—what constitutes as elderly now is different to what it was a decade ago and yet the same senior living concepts are still being prescribed. What is needed now is the type of advancement in design that we saw in medicine to enable seniors to not only live longer, but to live better.

NATALIE M RUIZ

Associate Principal | LA



The Springs at The Hacienda at the River
Tucson, AZ

special occasions. This helps to give individuals a sense of ownership and pride in being able to host in their home. Creating private family rooms that mimic the coziness of one's living room offers privacy for gatherings, which are especially necessary for smaller dwelling units. Ultimately, in 2023, we will be maintaining the important personal spaces of our homes in the designs of our senior living communities.

What is the future of living?

Four ways we can expect housing to evolve in the near future.

Residential spaces are increasingly wearing more than one hat. The typology is expanding, blending, and redefining itself alongside our changing habits. As our homes transform, they will become a smarter, healthier, and more impactful partner to us, helping enrich and improve the many shifting variables of our lives.

Health and Wellness

In 2023, the digital connectivity and capacities of our home spaces will continue to expand. The Home of Things (more on this [here](#)), will continue to consider how our homes can be embedded with sensors, processing abilities, software and other technologies that connect and exchange data with devices and systems. These changes will make work, errands and chores, time with friends, and health and wellness more accessible than ever, while collecting important biometric data. The goal of this digital shift is to make us healthier, happier, and more connected, while providing us the data and flexibility we need to make the right choices about how we want to live.

The Home of Things is incorporated in the prototype for the digital-first medical home (more on this [here](#)), which gives people the opportunity to connect with medical professionals in the comfort of their home. As Teladoc becomes more popular and desired we may begin seeing a suite of services offered right in our residences, such as in-house practitioners, with on-staff counselors and doctors available to tenants with medical needs. Read more on the growth of alternative sites of care [here](#). In public spaces, bots will assist residential staff with disinfecting and general cleaning, increasing safety for all. These evolutions are reflected in projections for the smart home market, as the industry is expected to nearly quadruple over the next five years, [from a 2021 valuation of \\$79.13 billion to \\$313.95 billion by 2027](#). In this way, we can expect continuous improvements in security, comfort, and connectivity.

Subscription Living

The global subscription e-commerce market size is

expected to [increase from \\$120.04 billion in 2022 to \\$904.2 billion by 2026](#). With online sales and package deliveries steadily rising, many city centers have turned to street-navigating robots to meet these needs. In the future, we could see specific corridors designed for bots to navigate our buildings independently. In addition to thinking about how our buildings can support delivery on the ground, we also need to consider the sky. Residential design should evaluate whether structures should incorporate landing docks and specialized mailrooms for deliveries. These additions will help to ease the stress put on the curb, which has become a cluttered space overburdened by deliveries, parking, and drop-offs, while meeting resident expectations about package safety and storage. Some luxury buildings offer a glimpse into a future that prioritizes and rethinks deliveries by envisioning mailrooms as gathering spaces for neighbors to connect. Read more on how subscription living is affecting resident expectations [here](#).



LV Symphony Park
Las Vegas, NV



The Need for ESG

A company’s purpose and mission play a large role in where consumers want to spend their time and money. ESG metrics are increasingly a standard for residents and investors. [According to Deloitte](#), the real estate industry must create opportunities through social impact investing, such as multi-tenant shared spaces and the transformation of underutilized buildings into thriving social venues. A sustainable real estate market goes beyond the energy efficiency of a finished building to include low-carbon construction processes. In short, ESG is on its way to becoming the standard

way of investing, with the Federal Reserve including climate change in their list of financial stability risks in [November 2020’s Financial Stability Report](#). Read more on how ESG is affecting the investing landscape [here](#).

Housing for All

[Providing housing to all is a critical issue](#), and we are seeing adjacent industries outside of housing step in to get involved, such as the medical sphere. Recognizing that unhoused patients are more likely to have a shorter life span, stay in a hospital longer, more likely to return, and have higher emergency room costs than the average

patient, hospitals are investing in impact investment funds as well as buying and operating their own housing alternatives.

In order to attract tenants, residential design must take into consideration how people are cared for and connected on site, while taking action to improve and protect the health of local communities.



These projections for the future of housing point toward two trends: a desire for ease and seamlessness in our daily lives, and social responsibility. It has long been known that consumers have higher expectations from brands, who are no longer simply selling products, but must take a stand against the environmental and social challenges of our time. It makes sense that these expectations, [which have already impacted how people travel](#), would influence where and how people want to live.

DAUN ST. AMAND
Principal | LA

Healthcare



A prototype for the digital-first medical home – is this the solution to our overburdened healthcare systems?

Design and technology can enable our homes to evolve with our needs across a lifetime.

By 2050, the world population will include [2.1 billion people](#) over the age of 60. As our population increases in age, so too will the amount of people dependent upon healthcare services, as well as their families and friends for support. The number of those supporters is already significant—there are currently [53 million unpaid caregivers](#) in the U.S. alone. Add to that [a shortage of 15 million healthcare workers](#) anticipated by 2030, and it becomes clear that the healthcare industry is facing a severe supply and demand challenge.

If given the choice, [three out of four adults aged 50 and older would prefer to age in place](#). This often-underserved population does not generally have the means, nor the home suited to support this desire. In fact, the affordable and accessible building stock necessary for an aging population is not currently available. People are living longer, with chronic conditions and without retirement plans. As the cost of care continues to rise, digital-first homes are our

RADIUS, a prototype for the new digital-first medical home, sets out to support a 100-year lifespan by leveraging existing technology to allow people to thrive as they age.

JIM HENRY
Principal | Dallas

most viable solution to removing barriers to at-home care.

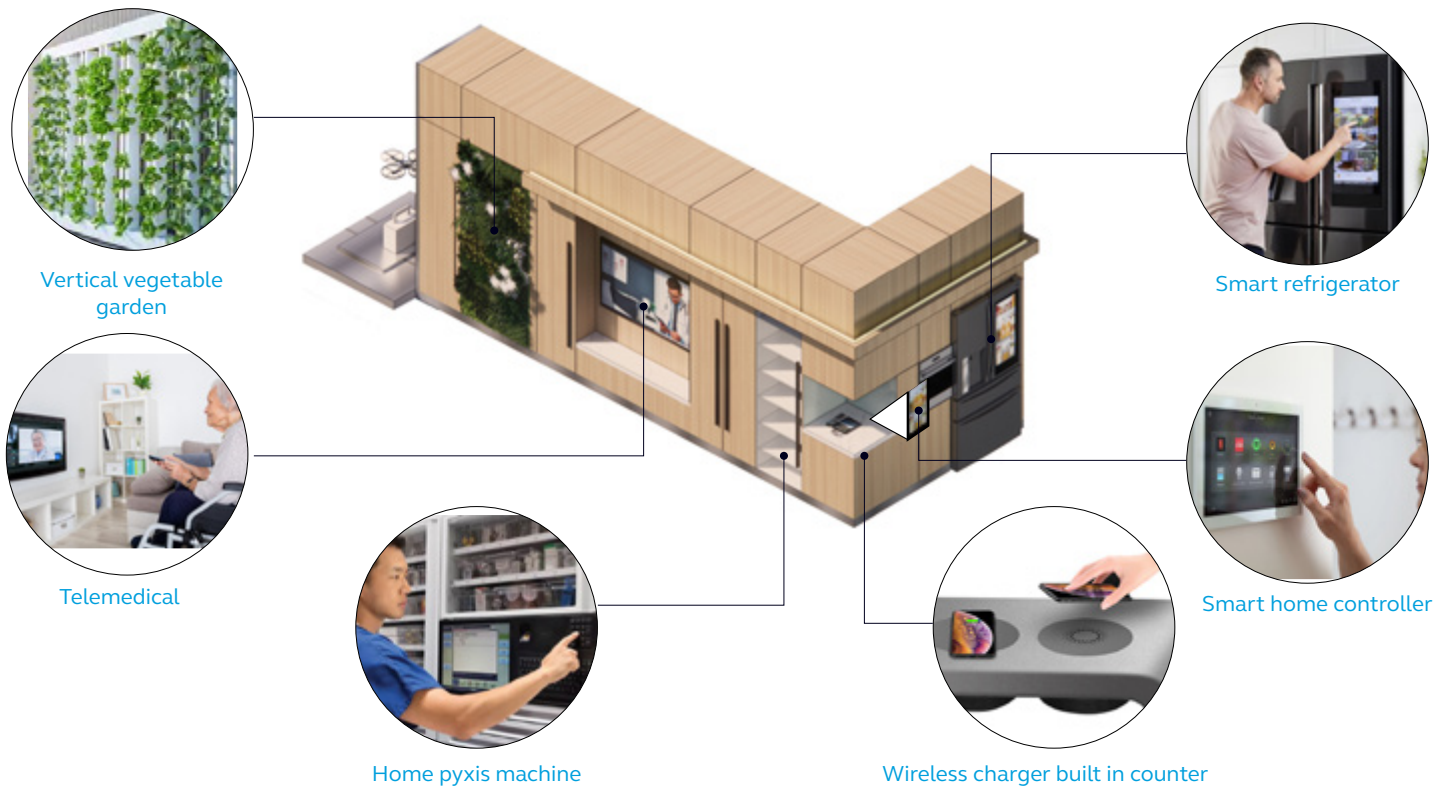
Innovation does not always require creating something new from the ground-up. Instead, a solution can utilize and combine existing approaches in a new way. Currently, at-home health technologies are disparate, overwhelming, and often frustratingly un-integrated.

In response, RADIUS aims to create a platform and an architecture that evolves with people across their lifetimes. The concept begins with a standard multifamily unit stripped down to its shell. From there, a central smart spine is placed within the

unit replacing traditional stick-built walls as the major divider of space from living to sleeping. The central smart spine is a customizable kit of parts with the ability to initiate many ways of living within the apartment, across a day or decades. It is the tool by which the apartment cares for the resident, morphs to how they live, and connects them to the people and resources they need. A prefabricated and modular approach is safer to construct, higher quality, and more sustainable over time with less waste. The “smart spine” is the foundation of the home’s built solution for living.

THE SPINE

A fully customizable system of parts to build a central smart system adaptable to all types of accommodation from new construction, renovations, and ADUs.



RADIUS is a health ecosystem; more than a set up products, it is a platform for care. It emerges from a mashup of technologies, including the Internet of Things (IoT), sensor technology, AI, 5G technology, and nano technology. Remote diagnostics analyze environmental and psychological data, while wearable tech gathers and transmits biometric information to provide alerts, track sleep, and monitor fitness. While several of these technologies have recently entered the healthcare market to aid in diagnostics, treatment,

and senior care, they have not yet converged into a single platform to provide holistic, individualized, accessible, and autonomous care. The resident's morning begins with a rush of ambient lighting that mimics daylight, helping balance their circadian rhythm. From there, they are met by a virtual assistant who lets them know how they have slept and their plans for the day. Vitals are then communicated with RADIUS which calculates their health leveraging the data and AI platform. The

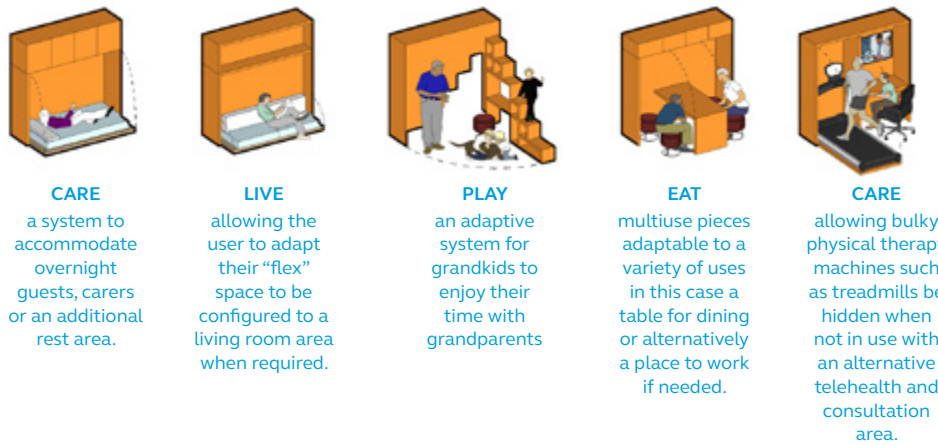
personal and health concierge communicates the daily calendar including personal, social, and health related activities. Access to this information is helpful for residents, their support system, as well as their network of primary care physicians, labs, pharmacies, and sub-specialists. The data can help with early detection for diseases, supporting our overburdened healthcare system, and getting people the care they need as quickly as possible. A digital viewing space within the central smart spine

allows for easy virtual care visits and patient monitoring. Following those visits, prescriptions are dropped off by drones and properly dispensed to the resident in their kitchen, avoiding medical complications and increased costs caused by improper adherence to prescriptions drugs. RADIUS connects to the medication dispensary in the home while monitoring their health to help maintain compliance and better health outcomes. The digital-first home seeks to use design to integrate forms of healthcare as needed, such as providing connections to medical gases and hard-wired vital monitoring in the bedroom to support the patient as their needs change.

Smart home appliances like a smart fridge can communicate with a phone, connect with a local grocery store, and enable residents to complete their weekly food shop in under 5 minutes. A vertical garden captures carbon while enabling residents to grow their own food helping solve an ever-growing scarcity of fresh food close to home. Nutrition plans are aligned with shopping, meal plans, and medications. Appliances are monitored and can be remotely turned off as a safety precaution.

Just as technology shapes to the resident's needs, so does the living space. In lieu of a flex space and stationary furniture, the home leverages a robotic flex module which is a smart moving and pivoting wall system controlled via the central spine. This allows the space to be reconfigured for daily needs, from family visits to fitness classes to telehealth appointments. There are various standardized configurations for a resident to choose from. One is called Living: a couch unfolds from the wall, the workspace opens, and a monitor allows for virtual work or socializing. Another is called Play and Stay: an additional bed opens up for guests, as well as a play area for children. Each module leverages automated guided vehicle (AGV) technology

and smart sensors that are found in distribution centers. There are countless configurations that can be customized to the needs of the homeowner, and their activity level. Not only does this solve the affordability and age in place problem for seniors, but it can be applied to families across all ages. As a family grows and contracts, the flex module allows them to change the design of their home. With this, the market for these products becomes more universal across a larger population. The kit of parts can be applied to existing buildings or new buildings. It can move with its residents and be reassembled in their new homes. Ultimately, RADIUS creates a more efficient, positive, and futuristic lifestyle for all.



How can we leverage technology and design to create new sites of care?

Design interventions that allow healthcare to meet people where they are.



Too often, healthcare facilities are monolithic buildings almost exclusively focused on interior operations. They are inhospitable and isolated from the communities they serve. [Half of the world's population lacks access to healthcare](#), making those facilities both a destination and a privilege. In turn, healthcare should no longer stand apart, instead permeating the urban fabric of the community and fully committing itself to the well-being of all.

One way to do so is through alternative sites of care—a trend that we do not anticipate will lose traction any time soon. Recently, there has been a shift to move

specialty care patients from large-scale hospitals to alternative sites. This change has been driven by a few factors. Increased healthcare expenditures have catalyzed a search for more cost-effective settings. The advancement of ambulatory surgery technologies has allowed more complicated yet non-emergency procedures to take place outside of hospitals, allowing patients better access, more choice, and the ability to recover at home. Leveraging technology, such as telemedicine, remote monitoring solutions, robotics, and autonomous vehicles increases the site of care shift and significantly changes how we provide care.

We are already seeing this in the proliferation of outpatient clinics and urgent care facilities in retail settings. Micro-hospitals are popping up in rural communities as a rebuttal to large magnet hospitals that are many miles away. We also see this shift in the increase of virtual care, which allows patients to have access to healthcare professionals from anywhere via their personal devices.

Telemedicine is particularly beneficial for healthcare deserts—or medically underserved areas—which lack an adequate number of pharmacies, clinics, emergency service options, and urgent cares. However, virtual care is not available to everyone. [One in three people in the world have never used the Internet before](#), let alone have reliable access at home. In turn, the health sector can create community medical centers in highly frequented spaces for people to take advantage of telemedicine and in-person care hybrid options.

Part of the challenge is finding the right place, at the right time,

at the right level of care. This triple aim of healthcare has been around for decades however it is evolving to include more novel approaches to meet the needs of the communities. One example is the [integration of telemedical checkups with local gas stations](#), offering better access to critical and preventative healthcare in a community that was a food and medical desert. Another is the introduction of healthcare centers to the ground floors of residential buildings. Careful research should be done alongside community input to give form to their third spaces. Several criteria can help establish locations for these sites, including: walkability, broadband connectivity, extended hours, and safety.

To flip the script, healthcare can come to the people. [Augmented guided vehicles](#) (AGVs) are changing how we do so. Specifically, services that do not require a human counterpart are well-suited for AGVs, such as prescription delivery, virtual screenings, simple vaccinations, and medical supply delivery to support first responders

and rural locations. Emerging technologies and the use of artificial intelligence (AI) are providing more convenient, personalized care for patients, and could create substantially more value for the industry—up to [\\$410 billion per year by 2025](#).

These changes in the health sector are an opportunity to introduce customer service to the patient journey in a way that does not exacerbate the

[compounding pressure on healthcare professionals](#). The challenge for designers is to create places that aid healthcare professionals in this emerging digitized world alongside experiences for in-person care that are enhanced by an online counterpart. These changes will ultimately be good for our health, good for the community, and good for business. Healthcare—long the center of gravitational force—is reaching back out.



It is the obligation of the industry to help [solve social issues like health equity](#) through the design of the built environment and the implementation of new and evolving technology. By introducing third spaces into the healthcare sector, we can look beyond traditional care in a way that is human-centric.

JULIE MENDOZA
Associate | Dallas



One Medical - Capitol Hill
Seattle, WA

Consumerization of health – what is the difference between a patient and a customer?

How healthcare can learn from consumer-focused industries.

The last decade has represented a shift towards patient empowerment, only to be accelerated by the global pandemic. As industries across the world have transitioned to the “life on demand” expectations of consumers, healthcare finds itself lagging far behind. Advancements in technology—primarily due to the introduction of tech start-ups in healthcare—have given patients access to a vast amount of information and data, allowing them to make more informed decisions about their health as well as their service providers. Telemedicine is one recent success that has proven to engage people who bring with them the expectations of the digital age. Though [only 66% of Millennials have a primary care provider](#), compared to 78% of Gen X and 85% of Baby Boomers, they are twice as likely as Boomers to use telemedicine.

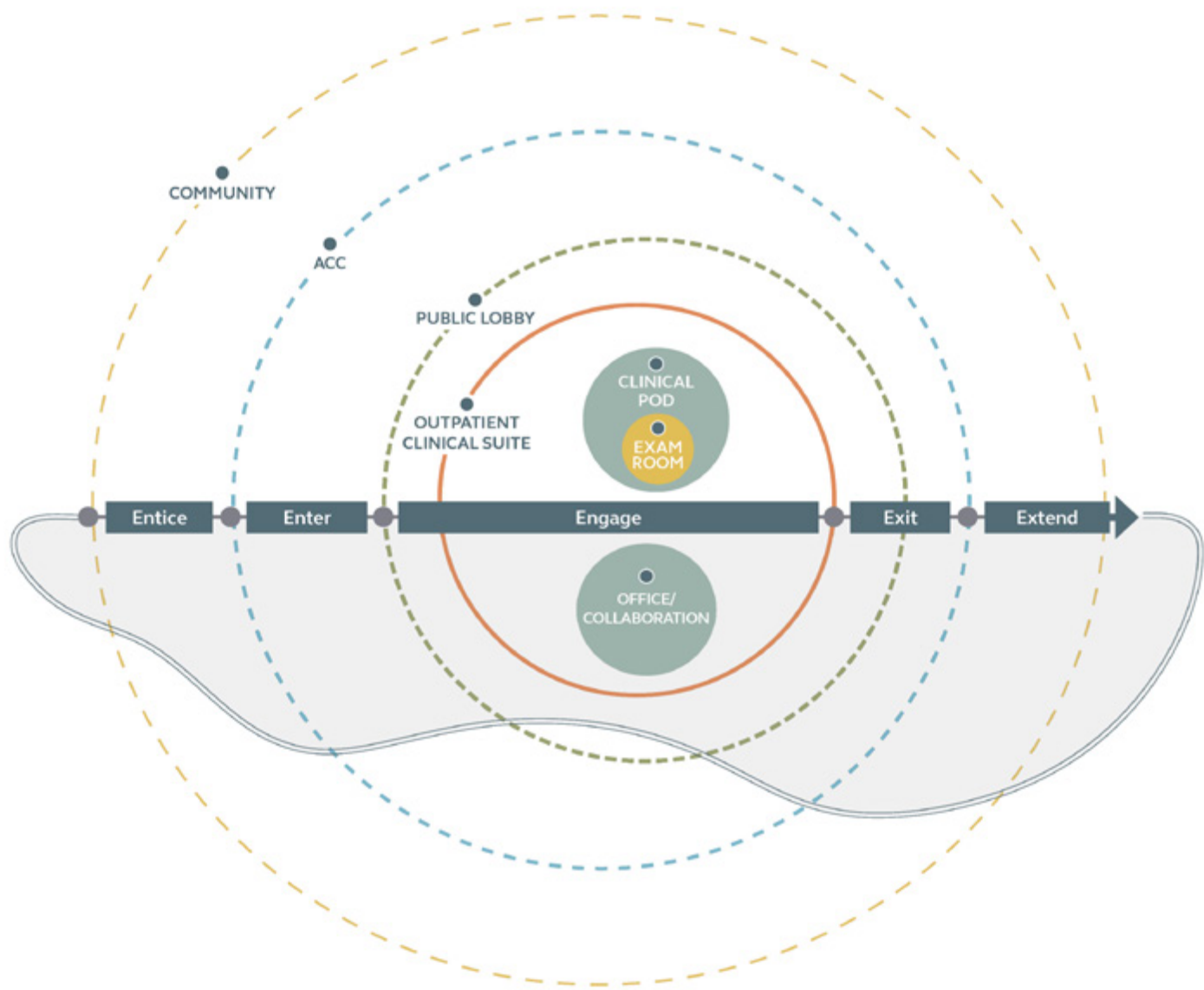
Though this is a step in the right direction, healthcare systems are infamous for long waits, unfriendly service, and a lack of cost transparency. They have [lost the trust of a large portion](#) of the

population. People are going to the doctor less and turning to platforms like TikTok to receive care. Of the people who do turn to TikTok, [37% trust influencers](#) over doctors who are on the platform. The healthcare system has long treated care as a costly, exclusive service rather than a human right, and is now feeling the repercussions of the approach as they face a consumer base armed with information. Patients are no longer making decisions based on their insurance network and are instead becoming more selective about how they receive care, as well as from whom. Non-traditional healthcare providers are gaining traction with an increasingly health-conscious population who are seeking patient-focused care. The market for the consumerization of healthcare was [estimated](#) at \$600 billion in 2019 and will increase at a 5.5% CAGR through 2025.

The term *patient* refers to a person that is registered or receiving medical care. A *customer* is a person that buys goods and services. With a person now empowered with information,

data, and changing expectations of how and where they receive care, the posture is changing, transforming the former patient into a customer. It is reported that more than 65% of people have higher expectations for customer service today than they did three-to-five years ago. To adapt to this shift, healthcare should take a page from the retail or hospitality sectors’ book, which emphasize a customer experience that is personalized and frictionless. The market segmentation for the consumerization of health aligns well with primary, preventative, and elective care. These forms of care indicate that a person is more proactive about their health prior to being sick. With information and more choices, this person is a consumer of healthcare rather than a patient receiving care.

Consumer-focused care is changing the way that healthcare systems respond to the market. The most impactful move is the increase of [outpatient care](#), which is less cumbersome, easier to navigate, and integrated within communities. As a convenient form of care, it becomes less



clinical and intimidating, and is often friendlier than inpatient experiences. Healthcare systems can also learn from the success of retail, which has proven that by creating multiple connection points between the brand and an individual, they can more easily establish brand loyalty. In

other words, if you offer people safe, welcoming spaces that are easy to access, they will continue to use your services. As a byproduct, our population will be, as they should, healthier. On the other hand, new entrants into the healthcare space are

looking to disrupt the healthcare industry by focusing on the individual and their specific needs by designing a system that fits their expectations. The demographics are changing as well. While Boomers and Gen X still receive their care in more traditional ways, younger

generations are placing a higher priority on their wellbeing and self-care. This move away from sick care has opened the door to an exploding wellness industry, one that includes a variety of health and wellness related products and services reinforcing the idea of consumer over patient.

How can healthcare systems learn from other consumer-focused markets? Retail and hospitality focus on the needs of the customer which includes a shift to the digitization of their industries and creating omni channel experiences. This means understanding the highly digital customer and creating end-to-end experiences along multiple touchpoints. As they focus on the customer, they gather valuable information, including preferences and behaviors from their customers to personalize the experience more effectively. By highly customizing the process, brands are creating loyalty and expanding their offerings.

Direct to consumer brands are utilizing digital experiences to improve the in-person experiences of brick-and-mortar locations. They know what their customer values, and then build the in-person experience to reflect them. This includes transparency of pricing as well as



identifying ESG goals, reducing friction throughout the process, and focusing on personal and community wellbeing. They are reducing their footprint from big box to boutique shopping to enhance the experience so that it reinforces the brand, which aligns with the product or service. Retail also understands that location matters, so too

does good visibility, convenient access, and proximity to other like brands, helping to create a holistic consumer destination. Healthcare and wellness brands can follow these concepts and gear them to their own customers to build brand awareness and loyalty, increase access, digitize the process, and customize the in-person experience.



Patients are no longer making decisions based on their insurance network, and are instead becoming more selective about how they receive care, as well as from whom.

JIM HENRY
Principal | Dallas

Hospitality

How is the definition of luxury changing and who are the new high-net-worth-individuals?

The changing luxury guard and what this means for travel and the guest experience.

A new age of luxury consumer has arrived. What was once dominated by the 55+ community is now an audience that spans generations, values, incomes, and expectations of the luxury market (see breakout box for the new luxury audience segments).

There are universal attributes of luxury hotels that are sought out by the entire audience. Take the quality of service, for example, and the ability for this to be delivered personally and even at times invisibly. The greatest design, or most expensive finishes, will never be valued as luxurious if the level of service is not on par. The value of the brand is also a key to its standing within the luxury market. It is rare to see a brand launch and immediately reach that esteem without first proving itself or building a legacy and trust in much the same way a Michelin star restaurant must earn its stripes.

Beyond service, time and exclusivity are the other luxuries these travelers expect. They demand a fluid experience that offers greater efficiency, connectivity, privacy and safety, from private transfers and entrances, to VIP parking and fast tracked access. This increasingly involves digital tools, which act to enhance the level of service and create a more interconnected and highly personalized experience.

The introduction of these varied luxury travelers into the market also comes with new expectations of luxury hotels. Though their needs vary, there is some overlap. The new luxury traveler is likely to be a conscious consumer who expects sustainability and social responsibility as prerequisites for their travel destinations (you can read more on how to incorporate both into hotel design [here](#)). They now prioritize experience over accommodations.

THE NEW LUXURY AUDIENCE SEGMENTS

The Financial Times and the Institute of Practitioners in Advertising (IPA) conducted a broad study of the luxury consumer to understand the reasons behind the industry’s massive growth since the pandemic. They segmented the luxury audience into seven distinct categories.

- 1. **The Seasoned Connoisseur, who is retired, buys for investment, has more money to spend since the pandemic, and is interested in sustainability.**
- 2. **The New Guard, who is the youngest audience, seeks to buy experiences, enjoys discovering the new, and is passionate about sustainability.**
- 3. **The Luxury Loyalist, who is between 45-64, represents the highest earners, is loyal to brands, and believes sustainability is linked to quality.**
- 4. **The Convenience Seeker, whose purchasing has increased over the last two years, is less likely to discover new brands, and seeks comfort in luxury purchases.**
- 5. **The Memory Maker, who seeks experiences over goods, choose sustainable brands, and believes luxury brands can stay relevant if they are more sustainable.**
- 6. **The Cost-Conscious Shopper, who has a high interest in luxury but is the least active, is of a broad age range, and can find luxury intimidating or awkward.**
- 7. **The Gift Giver, who has a mature profile, buys luxury for gifts, and believes sustainability is a must for the luxury market.**

There is no magic number hotels must spend on expensive finishes to attract luxury travelers. In other words, it is not indulgence that they seek, but elevated essentialism, and a feeling of authenticity. Though there are contradictions in their values—they might travel by business class, or even via private jet—they want to engage in acts of service on their trips that positively impact the environment and local community. What they want is to feel like they are a part of something bigger than themselves.

A [recent report](#) shows that when respondents were asked to choose from a list the word they most associated with luxury products, “distinctive” was the most popular answer. Luxury travelers seek to immerse themselves in spaces unlike any other, crafted uniquely to their destination’s location and identity (read more on the step-by-step process for creating a distinct and personalized destination [here](#)). They seek a sense of integration and harbor a desire to understand the history of a place and its people when visiting. In a way, they are looking to transcend the role of tourist, wanting instead to be treated and understood as travelers and global citizens.



Creating destinations for the new luxury travelers will require a much more nuanced approach to hotel design than before, one that sets aside preconceived notions of the luxury consumer and reimagines hotels based on the growing importance of experience

TODD LUNDGREN
Principal | London

Luxury guests want to establish an emotional connection with a place and community, but they also seek experiences that offer social capital. Younger generations will become [70% of the luxury market by 2025](#), and account for 130% of luxury market growth. As younger generations have entered the luxury market, they will be thinking about how their travel choices affect the people and environment around them.

The luxury hotel industry can meet and exceed guest expectations by helping guests create experiences that are personalized and impactful.



Boulud Sud Miami
Miami, FL



Grand Hyatt Kuwait
Kuwait City, Kuwait

How do we make sense of Environmental, Social, Governance in the context of the hotel?

Reimagining stranded hotel assets for a greener and more just future.

The hotel sector needs to [reduce its carbon emissions by 66% per room by 2030 and 90% per room by 2050](#). If the industry does not act now, its growth will only increase carbon emissions, contributing to global temperature rise.

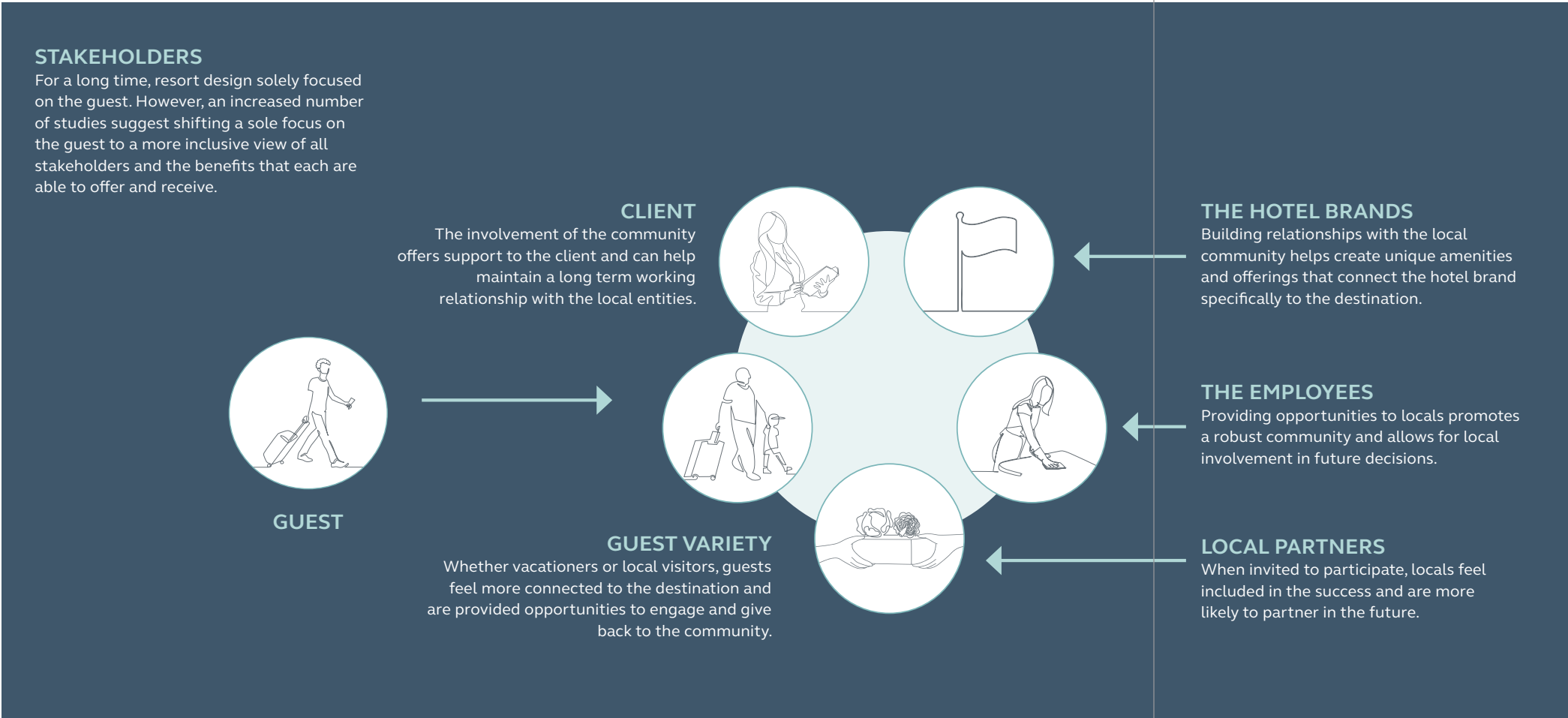
With the proliferation of global climate agreements, science-backed initiatives, and the fact that the construction industry accounts for [40% of the world's carbon emissions](#), minimal carbon cuts are no longer enough to make a case for ESG. The hotel sector is a major driver of the tourism industry's employment and revenue but [the most energy intensive](#), accounting for 2% of the 5% of global CO2 emissions for the sector. Substantial sustainability metrics are now a requirement for investors who are privy to the greenwashing veil. In [PwC's recent Global PE Responsible Investment Survey](#), 37% of respondents said they have refused an investment opportunity because of ESG concerns.

“An approach to Environmental, Social, and Governance (ESG) can benefit the planet, as well as everyone in the diverse set of hotel stakeholders, from developers to operators and guests. Stakeholders expect ESG issues to be front of mind for hotels. Failure to respond now is cause for getting left behind.

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Principal | London

Building owners who are slow to ensure their properties are operationally efficient will be left with stranded assets, which will plummet in value over time, can create a stigma within a portfolio, and make them increasingly difficult to sell. It is projected that trillions in assets will become stranded in response to the anticipated impacts of the climate emergency. A large portfolio of stranded assets not only will become unsellable, but will also limit the ability to raise funds, as well as affect credit ratings and insurance premiums.

Operators, too, are keenly aware that the global energy crisis is only getting worse. [Goldman Sachs finds](#) that by 2023, a typical family in the EU could face energy bills of €500 per month (USD \$519)—up 200% from 2021. In response and anticipation of the ongoing crisis, the Sustainable Hotel Alliance recommends a sustainable building, which is at least 20% more resource efficient, significantly reduces utility costs over time, and raises NOI and property value. Although there are upfront costs for sustainable upgrades, those will be paid back in utility savings within one year for a new build and one-to-ten years for a retrofit.



there are a few approaches that can be taken to revitalize its presence in the market.

In Madrid, CallisonRTKL reimagined a potentially stranded asset with a few key strategies: reduce operational carbon by improving envelope and mechanical systems; keep embodied carbon in the building; explore strategies to improve occupant satisfaction such as daylight, biophilia, views; and create an opportunity to improve design quality.

The design improved the envelope of an existing 1990s building so that it better regulates indoor conditions and provides enhanced daylight for employees, emits less carbon, and even generates its own energy. Rather than demolish

the building, a careful design upgrade for the façade created a high-performance envelope, with photovoltaics generating its own energy and a bioclimate system exposed to the sun that included glass slats for solar protection.

In addition to how stranded assets can be reimagined, there are several strategies that can be explored in new developments, explained [here](#). An approach to ESG will not only reduce long-term risk of investments, but will also create better conditions that appeal to talented staff and a new age of guests. In short, these shifting expectations are much more than a trend. ESG is the future.

Data on sustainability is also a priority for the new age of travelers, and it is not only investors who are tracking hotels’ progress. As guests are making travel arrangements, they are using platforms that list the sustainability rating of an accommodation by analyzing its carbon footprint and net zero plans. In a recent study conducted by MMGY Global, 32% of guests said they would pay 10% higher rates for a sustainable stay.

Additionally, [Booking.com reports](#) that 71% of travelers want to make more effort in the next year to travel more sustainably.

Though the social part of ESG is currently more difficult to quantify, does not mean that does not mean it is not a concern for hotel stakeholders. [According to JLL](#), hotels across the industry are implementing social agendas in response to pressure from employees and

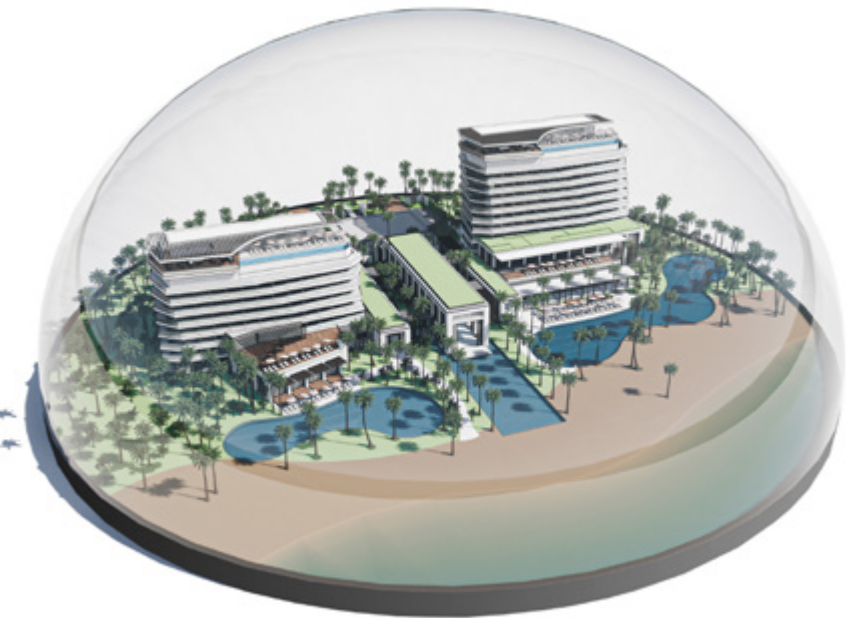
guests for inclusive and just travel. Nearly half of hotel guests now are between the ages of 18 to 35, increasing the prevalence of conscious consumerism and expectations for hotels to adopt an ethical framework. As more investors are adopting the United Nations Principles for Responsible Investing, social impact returns are increasingly intriguing to them, and social investments are becoming their own asset class.

The challenges hotels face to stay relevant amidst the transition to a greener and more just future can be addressed with sustainable design solutions, which allow environmental and social strategies to work hand-in-hand. Harder to measure social impacts can be enmeshed with environmental standards for a comprehensive ESG approach with holistic value. For an existing hotel at risk of becoming a stranded asset,



How can design shape authentic experiences for resort guests?

Five steps for creating a distinct resort experience.



Most of the world’s greatest destinations have evolved organically over time. Their stories reflect the histories of their places, the people who live there, and the brands themselves. The challenge for those creating a destination now is that there is no time to wait. To shortcut the process, resorts are often designed rapidly and irrespective of their surroundings, relying too heavily on cookie-cutter approaches. Instead, a global destination allows guests to be effortlessly immersed in the distinct

experience of a particular place. [A destination is an interconnected system](#) that brings together culture, location, and escapism to provide an authentic experience. It is shaped by six key attributes: client, guest experience, experience design, impact, community, and wellness. All parts of this interconnected system should work in unison, with each component vital to the others. While each part is independently significant, combining and evaluating the

key attributes will yield a more successful project. Like any other ecosystem, the destination thrives when everything works together in harmony. Designing a distinct experience from the ground up requires a Destination Plan, ultimately drawing in more guests and reducing risk. These are the five steps that hotels, resorts, and unique places can take to deliver outstanding experiences. This process will create an energy that cannot be manufactured, but born of the moment, truly creating the authenticity that we all crave. By developing a vision and a story, and designing each experience with the guest in mind, any place can become a true destination.

- 1. Begin with People and Place**
A Destination Plan starts with an understanding of why people would choose this place over another, whether that is the local culture, the weather, the place itself, or any combination of the above. These attributes lay the foundation for discovering and telling the story of the destination.
- 2. Find an Emotional Connection**
It is more than design—it is storytelling. The story of



Eau Palm Beach Resort & Spa-
Ballroom & Meeting Room
Manalapan, FL



Virgin Hotels New Orleans
New Orleans, LA

AN INTERCONNECTED SYSTEM
While each is independently significant, combining and evaluating specific attributes will yield a more successful project and one that is uniquely tied to its specific destination.



INDEPENDENTLY IMPORTANT
Each attribute is substantial enough to be viewed on its own.

AN INTERCONNECTED SYSTEM



SHARED IMPORTANCE
Understanding how the attributes are able to complement each other will yield a better result.

AN INTERCONNECTED SYSTEM



VARIED LEVEL OF SHARED IMPORTANCE
Fully understanding a projects, needs will provide varied levels of importance and subsequently the best project.

the destination will direct the design of guests' unique journeys across the site. It will dictate how moments are staged for them and the memories they will build, remember, and tell. Designers cannot provide unique amenities for each guest, but they can create adaptable places that encourage emotional responses beyond the architecture or physical design.

3. **Understand Your Guests**
Every story is driven by an understanding of who people are and what they are seeking. For a destination, this is a comprehensive look

at the diversity of guests, their motives for choosing a place, and what they consider special. This will directly inform the character and design of the resort.

4. **Allow the Experience to Define the Program**
Understand the big-picture vision, then design it down to a human scale. There is no singular way to design that will impact every guest. A variety of design ideas should be used to reach out and impact different guests in different situations. The program should be populated with opportunities for these individual experiences.

5. **Connect Guests Across Multiple Channels**
At the human scale, experiences are not driven by the built environment alone, but instead by connecting guests across many channels to seamlessly enhance multiple, relatable moments. Wellness—a new standard for the travel industry you can [read more about here](#)—is one way in which guests can come together in a peaceful and moving environment.



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